WESTERN BIRDS

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Front cover photo by © Phil Davis of Davidsonville, Maryland: Eurasian Wryneck (*Jynx torquilla*), Gambell, Alaska, 4 September 2003.

SHOUT
SHARE
IT

Western Specialty:
Rock Wren

Photo by © Joe Fuhrman of Los Angeles, California:
Rock Wren (*Salpinctes obsoletus*)
Anza-Borrego Desert State Park, California, April 2004.

WESTERN BIRDS

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FALL BIRD MIGRATION AT GAMBELL, ST. LAWRENCE ISLAND, ALASKA

PAUL E. LEHMAN, P. O. Box 379, Cape May, New Jersey 08204; lehman.paul@verizon.net

ABSTRACT: Gambell, St. Lawrence Island, Alaska, is located in the northern Bering Sea. Birders and ornithologists have visited Gambell, primarily during the late spring, for many decades. Regular coverage in fall, however—primarily between late August and early October—commenced only in the early 1990s and has continued through the present, making this site one of the most studied in western Alaska during the autumn season. Between 1992 and 2004, I spent a total of 251 days at Gambell between mid-August and early October, studying the birdlife. Many additional autumn avian records from there and elsewhere on St. Lawrence Island date back to the 1930s and earlier. Through 2004, 174 species had been documented at Gambell during the period August–November. Besides many species of western Alaska, this avifauna combines a seabird spectacle rivaled by few places in the world, the regular passage of many migrant shorebirds and "trans-Beringian" passerines, and numerous vagrants from both Asia and the North American mainland. The most intensive autumn coverage began only in 1999, but since then this site has hosted four first North American records—plus additional second and third sightings—as well as records of a number of North American species previously unrecorded in the Bering Sea region.

Gambell, Alaska, is a village of some 650 Siberian Yupik people located at the northwest tip of St. Lawrence Island in the northern Bering Sea (63° N, 172° W). It lies approximately 315 km west-southwest of Nome and only 65 km from the closest point on the Chukotskiy Peninsula—near the small city of Provideniya—on the Siberian mainland (Figure 1). The village of Savoonga, located 70 km east of Gambell and home to approximately 650 residents, is the only other permanent settlement on this large, mostly volcanic island, which measures just slightly over 160 km in length and 15–65 km in width, encompassing roughly 5200 km^2.

This article summarizes what is known about the fall bird migration at Gambell through 2004. Some 174 species have been recorded at this season. Most data are from late August to early October, between 1992 (particularly since 1999) and 2004, inclusive. Additional important information has been gathered since the late 1880s and from earlier in August and later in October

and November. This is the only site in the Bering Sea for which there exists such a recent, extensive body of data for this season.

PHYSICAL SETTING

Located between northeastern Siberia and western Alaska, and surrounded by the biologically rich, shallow waters of the continental shelf, St. Lawrence Island was part of the Bering Strait land bridge that connected Eurasia with North America during parts of the Pleistocene, until approximately 10,000 years ago. Partly because of the proximity of both continents and of the geologically recent connection between the two, the island hosts a flora and fauna with both palearctic and nearctic—as well as holarctic—components (Fay and Cade 1959, Sealy et al. 1971). Fay and Cade (1959) noted a fourth faunal element, known as Beringian or "Aleutican," to emphasize the distinctiveness of the avifauna of the Bering Sea region.

Three principal areas of low mountains reach elevations of just over 600 m. The only mountain near Gambell, Sevuokuk Mountain (Figures 2 and 3), lies immediately east of the village and reaches an elevation of 187 m. It and other highland areas above 60 m are characterized by lichen-covered volcanic rock and patches of low tundra vegetation. The lower slopes and lowlands are typically covered in moist tundra. Numerous ponds, lakes, and

Figure 1. Gambell, Alaska, is located at the northwestern tip of St. Lawrence Island in the northern Bering Sea. Other well-known migrant traps shown include Attu, Shemya, and Adak islands in the Aleutians, and St. Paul Island in the Pribilofs; the latter site has been surveyed extensively in fall only in 2003 and 2004. Difficult-to-reach St. Matthew Island remains only lightly explored. Many of the Asian passerines that occur as vagrants on the Bering Sea islands breed north to the Koryak Highlands or Anadyr River basin.

Map by Virginia Maynard

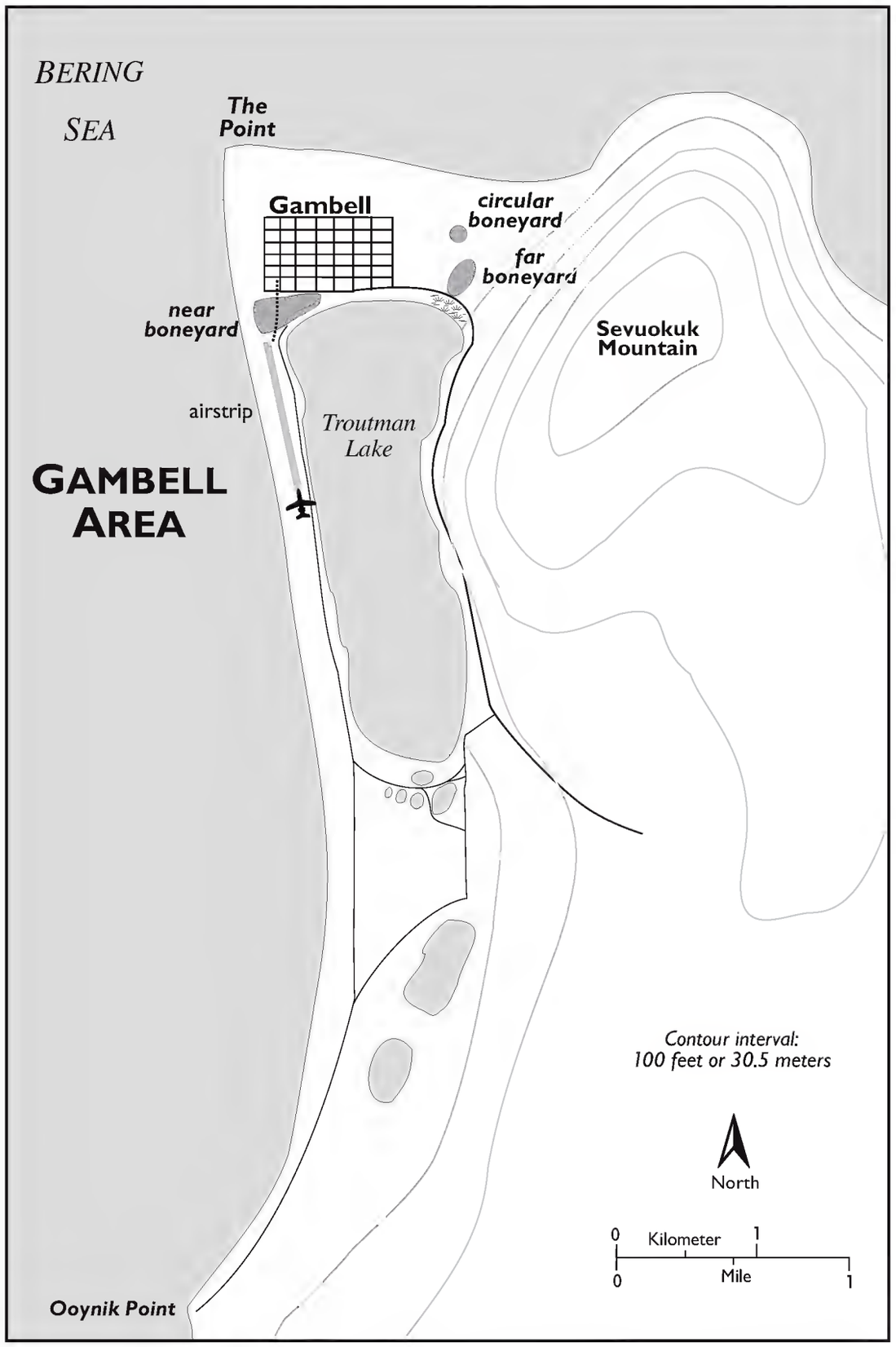

Figure 2. The Gambell area, as defined in this paper, extends approximately 8 km from the village to the first headland south of Troutman Lake. The three principal "boneyards" (middens) are excellent for landbirds. Sevuokuk Mountain (187 m) may be a partial barrier to the further eastward dispersal of some migrants, and its northern slopes host thousands of nesting alcids. Seawatching takes place primarily from "the point," the tip of St. Lawrence Island's Northwest Cape.

Map by Virginia Maynard

small rivers occupy approximately one-third of the surface area of the island and are productive nesting areas for waterfowl and shorebirds (Fay and Cade 1959). Several large coastal lagoons, particularly those running along the south side of the island (e.g., Koozata Lagoon), are rich environments of varying salinity that support large numbers of breeding and migrant waterbirds. Rocky sea-cliffs are home to immense numbers of nesting seabirds. Gambell village is located on a gravel bar at the island's Northwest Cape (Figures 2 and 4).

The climate at St. Lawrence Island is arctic maritime, with temperatures strongly moderated by the waters of the Bering Sea, at least when pack ice is absent. Summer temperatures rarely exceed 13° C (maximum ca. 18° C), whereas those in winter may fall to –23°C or below (minimum ca. –34°C). Moderate and strong winds blow regularly. Ocean temperatures remain between 0° and 3° C throughout the year. In late August and early September, daytime temperatures are typically 6–10° C, whereas by late September they usually remain between 1° and 4° C. Some interior sections of St. Lawrence Island, as well as stretches of protected coastline, are often warmer in the summer and colder in the winter than Gambell. The growing season stretches from approximately early June through late August (Fay and Cade 1959). Most rain falls during July and August. Mid-September often brings the first substantial snowfall to the mountains of the island and the nearby Chukotskiy Peninsula. But cycles of freezing and thawing are typical through much of November, after which snow is on the ground until spring. Total annual snowfall on the island may range from 75 to 480 cm (Fay and Cade 1959), with much blowing and drifting. Pack ice does not form until December or January. The dominant wind direction in summer is from the south and southwest, often accompanied by fog and rain, whereas that in winter is predominantly from the northeast and is stronger. Thus the autumn brings a transition period in which some years southwesterly winds dominate (at least through September), while during other years northerly or northeasterly winds last for many days in a row. This variation in wind direction is probably an important factor in determining the species composition and abundance of birds seen from year to year.

Vegetation on St. Lawrence Island is characteristic of the circumpolar tundra biome, the most homogeneous major terrestrial biotic community in the world (Fay and Cade 1959). There are few shrubs, and the only ones that might be termed "arborescent" are found in a few small, protected interior locations. Most shrubby plants are prostrate, the result of the persistent winds, thin soils, and relatively low summer temperatures. This lack of taller woody vegetation is a major distinction between the island habitats and those on the adjacent mainlands, such as the Seward Peninsula. In the area around Gambell, some of the ground is covered by very low tundra vegetation made up of forbs, grasses, sedges, mosses, and lichens, especially on the lower slopes of Sevuokuk Mountain. Much of the village itself is characterized by bare or sparsely vegetated gravel. The beaches are composed of gravel and are relatively sterile. A few small marshy areas and seasonal puddles may attract shorebirds and a few waterfowl. A large lake—Troutman Lake—is

Figure 3. This view—photographed in late August 2003—looks east and northeast from the north end of the runway and shows part of the village of Gambell and the north end of Troutman Lake. Sevuokuk Mountain is in the distance. In the foreground lies the "near boneyard." The three boneyards act as magnets for migrant and vagrant landbirds. The rich and disturbed soil found in them supports relatively lush vegetation, dominated by the Northern or Tall Wormwood (*Artemesia tilesii*) and Arctic Sage or Wormwood (*A. arctica*), that grows to a height of over a half meter. This cover, coupled with the furtive nature of many of the migrant passerines, makes obtaining good views of some of these birds difficult.

Photo by Anne Heyerly

Figure 4. The village of Gambell is located on a gravel bar at St. Lawrence Island's Northwest Cape. In this view looking west from the lower slope of Sevuokuk Mountain, the village, point, and three "boneyards" can be seen. In the foreground, the "circular boneyard" (front right) and part of the "far boneyard" (front left) are visible, as is a section of the "near Boneyard" (rear left). Photographed on 6 September 2004.

Photo by Brian L. Sullivan

found immediately south of the village. Most of its shores are relatively sterile, and the lake itself supports only a few waterfowl, many roosting and bathing gulls, and good numbers of loafing Horned Puffins (*Fratercula corniculata*), which nest on the cliffs of adjacent Sevuokuk Mountain.

Bordering the village are three major middens (known as "the boneyards"), as well as several other areas of disturbed ground (Figures 2, 3, and 4). These areas are characterized by relatively lush vegetation dominated by Northern or Tall Wormwood (*Artemisia tilesii*) and Arctic Sage or Wormwood (*A. arctica*), which by late summer grow to a maximum height of slightly more than a half meter (Figure 3). This growth is a magnet for passerines in autumn. The list of regularly occurring avian species found here includes a number with primarily Old World distributions that also nest on mainland Alaska—a few in small numbers on St. Lawrence Island as well—but which then return west in late summer and early fall to winter in southeast Asia or Africa. These "trans-Beringian" species include the Arctic Warbler (*Phylloscopus borealis*; Figure 5), Bluethroat (*Luscinia svecica*), Northern Wheatear (*Oenanthe oenanthe*), Eastern Yellow Wagtail (*Motacilla tschutschensis*), White Wagtail (*M. alba*), and Red-throated Pipit (*Anthus cervinus*). Another trans-Beringian migrant, the Gray-cheeked Thrush (*Catharus minimus*), has nesting populations in northeastern Siberia that in fall head east, back into North America. The boneyard vegetation is also attractive to most of the vagrant landbirds from both Asia and mainland North America. Two of the three boneyards are located near the base of Sevuokuk Mountain (Figures 2, 3, and 4), which can act as a barrier to some landbirds that might otherwise continue moving farther east. Other migrants probably arrive elsewhere on the island and work their way to the northwest tip at Gambell. Many "newly arrived" passerines are not discovered in the boneyards until the afternoon.

ORNITHOLOGICAL HISTORY

The discovery of St. Lawrence Island by Europeans is credited to the Danish explorer Vitus Bering in August 1728, but the island remained little explored until the late nineteenth century. Several mostly Russian expeditions that briefly visited the island or its surrounding waters between 1779 and 1881 collected a number of avian specimens and made casual mention of some of the birds encountered (Portenko 1981). The first detailed ornithological and natural-history notes on the island were taken by Edward W. Nelson in 1881. Additional brief visits by investigators followed, including those of W. S. Brooks and J. S. Dixon in 1913 and A. M. Bailey in 1921. Friedmann (1932) was the first to summarize the bird records (through 1930). Lengthier studies were conducted by Otto W. Geist from 1926 to 1935, Henry B. Collins, Jr., from 1928 to 1930, Grenold Collins in 1937, and Robert L. Rausch and Everett L. Schiller between 1949 and 1959. Francis H. Fay carried out fieldwork for a total of 19 months between 1952 and 1957 at a variety of sites around the island. This information, combined with that accumulated by Tom J. Cade and George O. Schumann in 1950, was summarized by Fay and Cade (1959). Most of that work took place during the late spring and summer months, with little investigation during the autumn. E. G. F. Sauer and E. K. Urban studied birds along the west side of the island in 1960. Extensive

fieldwork was carried out by Fay, Spencer G. Sealy, and Jean H. Bédard between 1958 and 1969, which was summarized by Sealy et al. (1971). Again, most of this work was carried out between the late spring and late summer, with only brief, intermittent coverage at other seasons. A detailed treatise by Leonid A. Portenko on the avifauna of the nearby Chukotskiy Peninsula in Russia, and which also mentions some records from St. Lawrence Island, was published in 1972/1973 (English translation in 1981/1989); however, most of the data from the Chukotskiy used in this study were recorded in the 1930s. The detailed work of Brina Kessel (1989) covers the avifauna of the Seward Peninsula on the adjacent Alaska mainland. It contains valuable information on the seasonal status of many waterbirds in the Bering Sea.

Several local Gambell residents stand out in their supplying a number of important bird specimens and providing valuable information to researchers visiting between the late 1920s and 1970s; they include Jimmie Otiyohok, Paul Silook, and Vernon K. Slwooko, Sr.

Birders have visited Gambell regularly during the late spring (late May through early June) since the mid-1970s. Drawn by the many western Alaska species, seabirds (Figure 6), and the regular strays from Asia, the numbers of observers at this season have increased, many visiting the village area for

Figure 5. St. Lawrence Island's location immediately south of the Bering Strait results in its collecting large numbers of "trans-Beringian" passerines that migrate in autumn from western Alaska back to Asia and even Africa for the winter. This group includes the Arctic Warbler (photographed here on 3 September 2004), Bluethroat, Northern Wheatear, Eastern Yellow Wagtail, and Red-throated Pipit. High seasonal counts of 70–74 Arctic Warblers were made at Gambell in 2002, 2003, and 2004.

Photo by Brian L. Sullivan

Figure 6. Seawatching at Gambell provides a spectacle rivaled by few places in the world. Almost a million birds (mostly murres, auklets, puffins, Pigeon Guillemots, Short-tailed Shearwaters, and Black-legged Kittiwakes) may be seen in a single day during the late summer and early fall, before the young alcids fledge and the adults move south and offshore. Good numbers of Emperor Geese, several species each of loons and eiders, Harlequin Ducks, Northern Fulmars, Pelagic Cormorants, phalaropes, jaegers, and large gulls may be seen as well. This photo, taken on 30 August 2004, shows a mixed flock of Common and Thick-billed Murres and Horned Puffins. Note the blacker coloration of the Thick-billed versus the paler (browner) Common Murre.

Photo by Brian L. Sullivan

approximately a week as participants on scheduled birding tours. Extensive data now exist on the spring migration at Gambell, although the period from mid- to late June has been largely ignored.

Following the fieldwork summarized by Sealy et al. (1971), the next fall visit was that by Philip D. Martin for a week in early September 1975. It was almost 15 years later that more regular early-autumn exploration at Gambell commenced, when in early September 1989 M. E. "Pete" Isleib and David W. Sonneborn paid a brief visit. After this, trips of up to a week's duration were typical in the early fall, beginning with a tour I led for Wings in late August 1992. Bird photographer Don Cunningham visited Gambell between early August and early October in seven years between 1993 and 2003 and documented a number of notable records. In 1997, I again led a tour there during late August. These week-long tours have continued annually through 2004, with two tours there in 2003; none have started earlier than 20 August. In 1998, I remained at Gambell after the tour concluded, through 8 September. In 1999, I stayed a total of 45 days, until 3 October. Gary Rosenberg and others filled in for me after the tour in 2000, remaining until 15 September. I returned for extended stays in subsequent years, from 23 August through 1 October 2001, from 23 August until 2 October 2002, from 21 August to 8 October 2003, and from 14 August until 4 October 2004. As of the end of that visit, I had spent a total of 251 days in autumn at Gambell since 1992.

Birders visiting in spring and fall since the 1970s have restricted their activities largely to within several miles of Gambell, with almost no exploration of other areas on St. Lawrence Island. The island is privately owned by Sivuqaq, Inc., and Savoonga Native Corporation. Visitors to Gambell must purchase a "land-crossing permit" upon arrival, which gives them access to areas within several miles of the village. Additional permits, special permission, and the hiring of guides are needed for forays farther away from town. For additional logistical and bird-finding information, see West (2002).

Most of the recent autumn coverage—including my own—has involved daily seawatching for two or more hours after dawn and one or more hours later in the day, multiple visits through the day to each of the boneyards and additional vegetated sites on the edge of the village, searches of the lower slopes of Sevuokuk Mountain, and periodic trips along the base of the mountain to the wetlands and first rocky headland south of Troutman Lake (almost daily early in the season, less often later in the period).

SPECIES ACCOUNTS

The accounts that follow treat the fall status and abundance of 174 species of birds recorded at Gambell, Alaska, from August to November, through 2004. "Gambell" is defined in this paper as that area which can be visited with a standard land-crossing permit: from the tip of Northwest Cape ("the point") east to Sevuokuk Mountain and south to the first major coastal headland (Ooynik Point), approximately 8 km south of the village (Figure 2). Additional information is given for July transients and winter visitors to provide a better perspective of status. Data on the spring season (through 2004), breeding status, and records from elsewhere on St. Lawrence Island are given for many species for which that information helps illuminate fall patterns. Last, also included—in brackets—are a number of additional species for which there are no definite fall records at Gambell but have been documented or otherwise reported elsewhere on the island at this season.

The following terms designating abundance have been kept flexible so that they more accurately portray relative abundance by species:

Abundant: Always encountered in very large numbers (at least several hundred per day).

Common: Always or almost always encountered daily, usually in moderate to large numbers.

Fairly common: Usually encountered daily, generally not in large numbers.

Uncommon: Occurs in small numbers and may be missed on a substantial number of days.

Rare: Occurs (or probably occurs) annually in very small numbers.

Very rare: Averages about one record annually, but not necessarily recorded every year.

Casual: One or a few records, but thought to be a likely candidate to occur again within a few years.

Accidental: One record, and future records thought to be unlikely for many years.

Abbreviations for one oft-cited journal are as follows: *AB*, *American Birds* (through 1993); *FN*, (*National Audubon Society*) *Field Notes* (through

1997); *NAB, North American Birds* (since 1998). Other abbreviations used: ph., photograph(s) or videotape; SLI, St. Lawrence Island; "the point," the tip of Northwest Cape, Gambell; UAM, University of Alaska Museum, Fairbanks.

The photographs and videotape noted in the accounts, as well as copies of written details for most of the rarer species, are on deposit at UAM. All records involving first Alaska occurrences have been accepted by the Alaska Checklist Committee.

BEAN GOOSE *Anser fabalis.* Accidental. One flew by the point 7 Sep 2002, one of only two definite fall records for Alaska (NAB 57:102). Both *A. f. serrirostris* and *A. f. middendorfii* have been collected in Alaska (Gibson and Kessel 1997); *serrirostris* breeds northeast to the Gulf of Anadyr and the base of the Chukotskiy Peninsula (Portenko 1981) and was collected at Gambell 8 May 1952 (Fay and Cade 1959). As a spring visitor this species is casual at Gambell but rare in the Aleutians and Pribilofs (Kessel and Gibson 1978).

[GREATER WHITE-FRONTED GOOSE *Anser albifrons.* There are no definite fall records for Gambell. One bird was seen an unknown number of miles south of the village on 8 Sep 1975, and up to 30 were at Kitnik, near Savoonga, 24–25 Aug 2004 (L. Sheffield in litt.). Local hunters report that small numbers occur irregularly in autumn in the large flocks of migrant Snow Geese that congregate on the east side of the island. This species is a rare spring migrant.]

EMPEROR GOOSE *Chen canagica.* Uncommon migrant at Gambell, but locally common elsewhere on the island. Large numbers migrate past SLI, with the primary wave typically moving immediately after the passage of a cold front and/or a wind shift to the north during late August. Under such conditions, hundreds may pass Gambell in one or two days. For example, 265 birds flew by on the morning of 26 Aug 2001, and 650 passed on 26 Aug 2003. Many flocks of hundreds of birds stay clear of the village area and arrive farther east and south on the island (e.g., 300+ on 31 Aug 2002 near Savoonga), where they linger for extended periods at scattered coastal lagoons and along rocky shores. Over 100 birds were near Savoonga already between 9 and 26 Aug 2004 (L. Sheffield in litt.). After early September only a few small flocks and single individuals were seen at Gambell, and the species was typically noted there on only a handful of days during a season. Friedmann (1932) cited a specimen collected at Gambell 2 Oct 1930. Fay (1961) noted that local residents talked of birds gathering on SLI near Southeast Cape, with some persisting until early October and a few individuals having remained even until December. Friedmann (1932) and Fay and Cade (1959) stated that Emperor Geese breed on the island but that much larger numbers of nonbreeders and molting birds are to be found along the south coast beginning in midsummer, with >10,000 having been counted there (Portenko 1981). Many of the latter birds probably perform a mid-summer molt-migration to SLI from breeding grounds at the Yukon–Kuskokwim delta (Jones 1972). Local residents have reported, however, that the increased use of all-terrain vehicles has resulted in much more human visitation to the southern and eastern sections of the island, increasing disturbance and reducing the numbers of molting geese present.

SNOW GOOSE *Chen caerulescens.* Uncommon migrant at Gambell but locally common elsewhere on SLI. These Siberian-breeding Snow Geese nest primarily on Wrangel Island and depart that area beginning in late August and early September, earlier if the weather turns cold or no young are raised (Portenko 1981). A flock of 24 arrived west of Savoonga 23 Aug 2004 (L. Sheffield in litt.). The species is numerous on SLI during September and early October, and many local residents travel to the southern and eastern parts of the island to hunt them. Thousands of birds are

reportedly present. At Gambell, however, this species passes by sporadically (perhaps more often at night, when flocks are sometimes heard overhead), probably the result of local hunting pressure. Small- to medium-sized flocks were seen there between 26 Aug (2001) and 29 Sep (2003). Most season totals were of up to 200 birds, but 600 were counted in 2003, of which 585 passed from 26 to 29 Sep. This species is rare in spring.

BRANT *Branta bernicla*. Like the Emperor and Snow geese, this species is an uncommon migrant at Gambell, but it is locally fairly common to common elsewhere on SLI. All records refer to the Black Brant (*B. b. nigricans*). Small- to medium-sized flocks and single birds pass by the point sporadically between late August and late September (latest record: 25 birds on 30 Sep 2003). Only two birds were seen in autumn 1999, and 14 during 2004, but 120–130 were seen in both 2001 and 2002, and 186 were counted in 2003. Twelve birds flew by Savoonga 21 Aug 2004 (L. Sheffield in litt.). Portenko (1981) cited 1 Oct (1933) as the latest date for the Chukotskiy Peninsula. Fay and Cade (1959) stated that a few nest on SLI; Sealy et al. (1971) noted the Brant as "scarce" in summer, with rare concentrations of molting birds.

[CACKLING GOOSE *Branta hutchinsii*. Local hunters report very small numbers among the large Snow Goose flocks that congregate during fall elsewhere on the island. A few were reported taken on the island sometime between November 1995 and October 1996 (Kawerak and ADFG 1997). None have been recorded with certainty in autumn at Gambell, however, where there are a number of spring sightings (Fay and Cade 1959, Sealy et al. 1971, J. L. Dunn in litt.). The subspecies breeding along the western coast of mainland Alaska are *B. h. minima* (Yukon–Kuskokwim delta region; Gibson and Kessel 1997) and *B. h. taverneri* (from the Seward Peninsula northward), although there is a slim chance that the Lesser Canada Goose (*B. canadensis parvipes*) from central Alaska might occur as well. Friedmann (1934) assigned bones from middens on SLI to *minima*, though *taverneri* was not described until 1951.]

[TUNDRA SWAN *Cygnus columbianus*. There are no known fall records at Gambell, although a single immature was shot an unknown number of miles south of the village in late September or early October 2003 (ph. UAM), and a small number was reported taken on SLI sometime between November 1995 and October 1996 (Kawerak and ADFG 1997). The species is rare but regular at Gambell in spring. It nested regularly on SLI between 1899 and the 1930s (Friedmann 1932, Portenko 1981). Fay and Cade (1959) listed a number of nesting records scattered about the island through 1957, Fay (1961) noted several pairs on the western part of the island, and a number of pairs were seen during summer 2004 (L. Sheffield in litt.). All reports are assumed to involve the nominate North American subspecies, the Whistling Swan, which also breeds on the Chukotskiy Peninsula (AOU 1998). Bewick's Swan (*C. c. bewickii*) has been seen in the latter region as well, however (Karhu 2004).]

EURASIAN WIGEON *Anas penelope*. Rare migrant. Records are primarily of single individuals and small flocks passing the point, with a few birds seen at local ponds as well. Since 1999 there have been 14 fall records involving 61 individuals, between 27 Aug (2004) and 26 Sep (2004); the largest flock was of 11 on 18 Sep 2003. This species breeds northeast to the Anadyr River basin (Vaurie 1965).

MALLARD *Anas platyrhynchos*. Casual visitor. The only definite fall record is of three individuals 14 Sep 2000 (G. Rosenberg in litt.). The species is very rare in spring. A small number of birds were reportedly harvested by residents somewhere on SLI sometime between November 1995 and October 1996 (Kawerak and ADFG 1997).

NORTHERN SHOVELER *Anas clypeata*. Casual visitor. The only fall records are of three on 25 Aug 1992 and one on 27 Aug 1998. The species is also a casual spring visitor.

NORTHERN PINTAIL *Anas acuta*. Uncommon to fairly common migrant. Annual totals varied between 90 and 150 birds, with most seen between mid-August and mid-September. High counts were of 55 individuals on both 29 Aug 2000 and 15 Sep 2001. The latest record is for 2 Oct (2003). This species is fairly common in spring and it nests on SLI, including at Gambell in at least 1953 (Fay and Cade 1959).

GREEN-WINGED TEAL *Anas crecca*. Rare migrant. Eight birds were seen between 1 and 20 Sep 1999, a total of 14 was present between 23 Aug and 21 Sep 2002 (ph. UAM), a total of 15 was seen between 30 Aug and 12 Sep 2003, and 8 were found on 28 Aug 2004. Sometimes a small flock remained in the area for weeks. Two were near Savoonga 24–27 Aug 2004 (L. Sheffield in litt.). Because all the birds are in eclipse, female, or immature plumage, their subspecific identity is uncertain; both the American (*A. c. carolinensis*) and Eurasian (*A. c. crecca*) Green-winged Teal occur on SLI (Winker et al. 2002), as do intergrades (J. L. Dunn in litt.).

GREATER SCAUP *Aythya marila*. Casual visitor. The only fall record is of one from 16 Aug to 3 Oct 2004 (ph. UAM). A specimen was taken west of Savoonga 28 Oct 1935 (Murie 1936). This species is rare but regular in spring.

STELLER'S EIDER *Polysticta stelleri*. Uncommon migrant and visitor. Single birds and small flocks pass by the point irregularly throughout the fall. Numbers in late August typically surpass those of September. The species may occur in small numbers for several days in a row, but then a week or more may pass until the next sighting. The highest one-day total was of 54 birds, including a flock of 32, on 22 Aug 1999. Most seasonal totals ranged from 44 to 104 individuals, but only 6 birds were seen in 2004. Numbers in spring have declined recently in comparison to those in the 1980s and early 1990s (J. L. Dunn in litt.). Good numbers of eiders are known to molt in late summer along the south shore of SLI, although it is not known how many of these are Steller's. This species has been found breeding on the island on several occasions, as late as 1954 (Friedmann 1932, Fay and Cade 1959). More recently, Quakenbush et al. (2002) reported no nesting records on SLI since then and that the species was never more than a sporadic breeder. Late dates are of a specimen taken on SLI 7 Nov 1935 (Murie 1936) and three shot along the island's south shore on 6 Nov 1964 (Kessel 1989).

SPECTACLED EIDER *Somateria fischeri*. Uncommon visitor and migrant in early fall, becoming somewhat more numerous by late September; said to be common later in October and/or November. Most birds are seen from the point, but a few are found on local lakes. A small number of nests have been found on SLI (Fay and Cade 1959; USF&WS 2003, unpubl. data). Numbers are reported to linger along the south side of the island in late summer and early autumn during molt; a flock of 500–1000 molting males was reported there on 18 Sep 1980 (Kessel 1989). Typically, a few individuals are seen at Gambell on only a handful of days between late August and mid-September; sightings increase in frequency thereafter. The highest count in early autumn was of 14 on 7 Sep 2002; in mid-autumn it was of 20 individuals on 4 Oct 2003. Local residents reported that many hundreds or even thousands of birds pass Gambell and SLI during the late autumn, usually between mid-October and early November; Portenko (1981), however, cited 23 Oct (1933) as the latest date for the Chukotskiy Peninsula. A large percentage of the species' overall population has been found recently wintering in openings in the pack ice in the Bering Sea south of SLI (Petersen et al. 1999).

KING EIDER *Somateria spectabilis*. Common migrant and visitor. This is the most numerous eider at Gambell in both fall and spring, with most autumn totals ranging from 350 to 600+ and with ca.1800 in 2003. Maximum one-day counts are 150 on 26 Sep 2001 and 190 on 24 Aug 2003. Some 200 were near Savoonga

11 Aug 2003 and 190 were there during August 2004 (L. Sheffield in litt.). Eight specimens were taken on the island in autumn 1935 through at least 6 Nov (Murie 1936). Portenko (1981) stated that, depending on ice conditions, this species may winter in good numbers north to the Diomedes and that it winters in small numbers along the south shore of the Chukotskiy Peninsula.

COMMON EIDER *Somateria mollissima*. Uncommon migrant and visitor in early fall, becoming fairly common later in the period. Daily counts between mid-August and early September are usually of fewer than five birds, and the species is not seen at all on many days. Up to 15 were along the coast near Savoonga 7–24 Aug 2004. By mid- or late September, it is of daily occurrence at Gambell, with up to 45–60 per day, and up to 100 per day in early October. The maximum one-day count was of 170 on 29 Sep 2004. Six hundred birds were counted in 2003. This species breeds on SLI (Fay and Cade 1959), with an estimate of 350 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). Numbers are reported to spend the late summer and early autumn, during molt, along the south side of the island. Late-fall and early-winter departure dates are unknown, but specimens from SLI were taken 28 Oct and 7 Nov 1935 (Murie 1936). Kessel (1989) stated that ice conditions determine the species' departure dates from the Seward Peninsula and that it overwinters rarely as well. The subspecies occurring regularly in Alaska is *S. m. v-nigrum* (Gibson and Kessel 1997).

HARLEQUIN DUCK *Histrionicus histrionicus*. Common visitor. This species was seen daily passing the point and, especially, feeding and loafing off the rocky headlands to the south (e.g., Ooynik Point). Fay and Cade (1959) noted that SLI is a major molting site, particularly for males. Many of the birds passing Gambell are apparently making local feeding forays, so obtaining a seasonal total was virtually impossible. Most counts ranged up to 100 per day, with high counts of up to 225 per day, and 300 seen on 2 Sep 1998 (mostly at headlands south of the village). Departure dates in late fall are unknown; specimens were taken on 12 and 19 Oct 1936, and there is an anecdotal winter report of a live bird found sitting on lake ice after being wounded by a Gyrfalcon (Murie 1936).

WHITE-WINGED SCOTER *Melanitta fusca*. Rare migrant. Five or six were reported near Gambell 2–3 Aug 1946 (Fay and Cade 1959). More recently, a total of 79 individuals was counted from the point from 1998 through 2004, including a flock of 21 on 3 Oct and another of 13 on 4 Oct 2004; dates range from 26 Aug (1998 and 2003) to 4–7 Oct (2003). The subspecies involved—American *deglandi* or Asian *stejnegeri*—was not determined for most birds, although an adult male 29 Sep 2004 showed extensive, contrasting brownish flanks and lower vent, characters of *deglandi*. This species is an uncommon spring migrant. *Melanitta f. stejnegeri*—which breeds northeast to the northern Anadyr River basin (Vaurie 1965)—has been photographed in Alaska at Nome 30 May 2001 and at Gambell 2–4 Jun 2002 (Garner et al. 2004).

BLACK SCOTER *Melanitta nigra*. Rare migrant. A total of 24 individuals was counted from the point from 1997 through 2004, with dates ranging from 27 Aug (1998 and 2003) to 17 Sep (2001) and 29 Sep (2003). The species is also rare in spring. The race *M. n. americana* nests in Alaska and in eastern Russia northeast to at least the Anadyr River basin (Portenko 1981).

LONG-TAILED DUCK *Clangula hyemalis*. Uncommon migrant. This species is known to breed on SLI, with broods noted from Gambell south to Boxer Bay 8–9 Aug 1950 (Fay and Cade 1959). Also, up to hundreds of nonbreeding, molting birds summer at lakes and lagoons This species passes the point sporadically for most of the autumn, with an increase in numbers beginning in mid-or-late September. Single-day maxima are of up to 30 birds, and season totals range from 30 to 125.

The Long-tailed Duck is possibly more numerous elsewhere on the island (e.g., 150 on 30 Aug 1993 well south of the village). Local residents, as well as Murie (1936) and Fay and Cade (1959), also noted that large numbers overwinter locally in leads in the pack ice. The species is a common spring migrant.

RED-BREASTED MERGANSER *Mergus serrator.* Uncommon migrant. Nelson (1887) reported this species breeding on SLI in 1881, and Sealy et al. (1971) noted that it is a possible nester on the island. A specimen was collected in September 1930 (Friedmann 1932), and an unknown number of birds was seen south of Gambell 8 Sep 1975. Single individuals and small flocks passed the point between 11 Sep and 1 Oct, 2000–2004, totaling 71 individuals, and most after mid-September. The high count was of 23 on 29 Sep 2003. Late departure dates are not known; the last observations on the Seward Peninsula correspond closely with dates of freeze-up (Kessel 1989). This species is also an uncommon spring migrant at Gambell.

PTARMIGAN SP. *Lagopus* sp. Local residents have reported ptarmigan at Gambell and elsewhere on SLI casually during the late fall and winter. Murie (1936:368–369) wrote that according to O.W. Geist, "Occasionally, and practically during every winter I spent on the island, ptarmigan appeared. I believe they were blown there during heavy snowstorms, either from the Alaskan mainland, or, more likely, from the near Siberian points.... Several ptarmigan were killed by trappers last winter." Fay and Cade (1959:111) thought that "the upland habitat where these birds were found suggests that the species may be...Rock Ptarmigan" (*L. muta*). Two Rock Ptarmigan were at Sevuokuk Mountain in April 2004 (B. Benter in litt.).

RED-THROATED LOON *Gavia stellata.* Uncommon migrant. Totals range from 4 to 17 individuals per year between late August and early October. Later records include one collected 9 Oct 1930 (Friedmann 1932), and two taken near Gambell 12 Oct 1935, and one there 24 Oct 1935 (Murie 1936). Fay and Cade (1959) reported this species as a common breeder on SLI.

ARCTIC LOON *Gavia arctica.* Rare migrant. The only fall sightings are of two on 9 Sep 1992 (D. Sonneborn in litt.), single individuals on 23 Aug 1994 (M. Heindel in litt.) and 31 Aug and 6 Sep 2003, and a total of seven birds between 16 Sep (2004) and 2 Oct (2003). Given that this species is a regular spring migrant at Gambell in small to (more rarely) moderate numbers, it is uncertain whether most fall migrants take a different route or pass by later in the season. This species nests from the Chukotskiy Peninsula south to Sakhalin Island (Dement'ev and Gladkov 1951) and in very small numbers on the Alaska mainland from the Seward Peninsula to Kotzebue Sound (Douglas and Sowl 1993).

PACIFIC LOON *Gavia pacifica.* Common migrant. Through early September daily counts were usually <10, but after that they increased to up to 75 per day, with a maximum of 125 on 30 Sep 1999. Seasonal totals ranged from 190 to 380 birds. The latest records are of specimens collected at Gambell 14 and 16 Oct 1930 (Friedmann 1932) and of two collected on SLI 29 Oct 1935 (Murie 1936). This species nests on the island (Fay and Cade 1959).

COMMON LOON *Gavia immer.* Casual visitor. The only verified records of this species on SLI involve an alternate-plumaged adult collected near Savoonga 11 Jul 1931 (MVZ 60231; Fay and Cade 1959) and one in basic plumage flying by the point 23 Sep 2004. An adult was reported at Savoonga 4 and 15 Jul 2004 (L. Sheffield in litt.). One account of some 290 birds believed to have been shot on the island between November 1995 and October 1996 (Kawerak and ADFG 1997) is certainly in error. This species is a scarce visitor to the adjacent mainland coast on the Seward Peninsula (Kessel 1989), primarily during the late summer and early fall, when it can be found daily in small numbers (pers. obs.).

YELLOW-BILLED LOON *Gavia adamsii*. Uncommon migrant. Few occur early in the season, with <10 seen annually between mid-August and mid-September, except for 30 birds in 2004. Numbers increase thereafter. High counts were of 26 birds on 28 Sep 1999, 28 on 25 Sep 2003, and 40 on 22 Sep 2004. A total of 98 was counted between 22 Sep and 8 Oct 2003, and 132 was the season total between 25 Aug and 4 Oct 2004. Almost all birds were adults in full alternate plumage, and most were flying west to east. A specimen was collected on SLI 14 Oct 1930 (Friedmann 1932). This species is a rare migrant in spring (J. L. Dunn in litt.), and it nests sparingly on the island (Fay and Cade 1959).

HORNED GREBE *Podiceps auritus*. Casual visitor. One was present 23 Sep 2004 (ph. UAM). There are previous June records for SLI (Sealy et al. 1971). In North America this species breeds west to central Alaska (Gabrielson and Lincoln 1959) and is a very rare visitor on the Seward Peninsula (Kessel 1989); in Asia it nests northeast to the Anadyr River basin (Vaurie 1965).

RED-NECKED GREBE *Podiceps grisegena*. Rare migrant. Since 1992 there have been at least 15 fall records involving a minimum of 19 birds (ph. UAM), between 26 Aug (2004) and 3 Oct (1999). The maximum was of three on 23 Sep 2004. Some birds lingered for extended periods, so exact seasonal totals were difficult to obtain. One was collected near Savoonga 3 Oct 1953 (Bailey 1956). The species occurs annually in spring in very small numbers (J. L. Dunn in litt.), and there is one confirmed breeding record for SLI in 1940 (Sealy et al. 1971).

[SHORT-TAILED ALBATROSS *Phoebastria albatrus*. More than 100 years ago, when the species was much more numerous and widespread, Nelson (1883:111, 1887:61) reported that in late summer 1881 "adults of this species [were] seen between St. Lawrence Island and Plover Bay [Provideniya], Siberia" and that they were "common around Bering Straits in summer. A number were seen about the Diomede Islands, and others about St. Lawrence Island and the opposite Siberian shore." The species is also known by bones from middens at Gambell and elsewhere on SLI (Friedmann 1932, Murie 1936). There is no recent record near SLI (Fay and Cade 1959). The last published reports from the northern Bering and Chukchi seas were of eight birds seen, with two collected, off the north shore of the Chukotskiy Peninsula in September 1939 (Dement'ev and Gladkov 1951); however, these specimens cannot be verified, and Alaska reports during the first half of the 20th century are complicated by the fact that all white-bodied albatrosses then were assumed to be *albatrus* (D. D. Gibson in litt.). Recent Short-tailed Albatross records have come from no closer to SLI than the central Bering Sea, e.g., west of St. Matthew Island (NAB 58:583). The breeding range of this species is restricted to islands in southern Japan.]

NORTHERN FULMAR *Fulmarus glacialis*. Uncommon to common visitor and migrant through early September, uncommon to rare thereafter. Counts varied substantially from year to year, and in late August and early September ranged from 50 per day in one year to up to 500 per day in another. Wind conditions played an important role, with the largest numbers usually counted during stronger northerly or northeasterly winds. Numbers declined rapidly beginning in September, and in some years few or no birds were seen after mid-September. The latest date at Gambell was 6 Oct (2003). This species is not known to breed on SLI, but it does nest commonly on St. Matthew Island (Winker et al. 2002) and the adjacent Chukotskiy Peninsula, where it may linger through late October (Murie 1936, Portenko 1981). Watson and Divoky (1972) noted it as common in the Bering Strait area 18 Oct 1970. It winters north to the edge of the pack ice (Kessel 1989). Almost all birds are of the light morph, with a few records of the dark morph (a rare visitor presumably from the south). Fay and Cade (1959) reported "several" in "dark plumage" from unknown season(s) near Gambell, single individuals were off the point 23 Aug 2002 and 24 Aug 2003, and two were there 15 Aug 2004.

SHORT-TAILED SHEARWATER *Puffinus tenuirostris*. Common to abundant visitor and migrant. The waters off Gambell are important feeding grounds for this species, which breeds in southern Australia. There are very few spring records (J. L. Dunn in litt.), and local arrival dates in summer are poorly known. But spectacular numbers of birds arrive by late August. The largest numbers are seen during stronger winds, particularly those from the north or northeast, when hundreds of thousands of birds pass by and feed offshore. The species was noted daily, no matter the weather, at least in small numbers. Some sample high counts include 550,000 on 18 Sep 1999, 700,000 on 5 Sep 2000 (incorrectly noted as off Gambell's "Northeast Pt." in NAB 55:89), 550,000 on 13 Sep 2001, 600,000 on 7 Sep 2002 (ph. UAM), and 550,000 on 22 Sep 2004. In 2003, some 800,000+ were feeding close to shore from 17 to 21 Sep, peaking at an estimated 1,200,000 birds on 20 Sep (ph. UAM). Large numbers often remain in early October (e.g., 300,000 on 4 Oct 2004). In 1970 the species was still common in the Bering Strait area on 18 Oct (Watson and Divoky 1972). According to Gambell residents, Short-tailed Shearwaters may linger into November; there are records to mid-November at Barrow (Gabrielson and Lincoln 1959) and into December north to the Bering Strait.

FORK-TAILED STORM-PETREL *Oceanodroma furcata*. Casual visitor. This species is not known to nest north of the Aleutians (Sowls et al. 1978); it is casual in the northern Bering Sea between July and October. There are anecdotal records from "about St. Lawrence Island" in 1881 (Nelson 1887:64, Fay and Cade 1959). Murie (1936) cited a specimen taken at Gambell on the very late date of 2 Nov 1932 (Univ. Wash. Burke Mus. 7508). Recent records are of up to three seen off the point 6–7 Sep 2000 (NAB 55:89) and single individuals 6–7 Sep (ph. UAM) and 18 Sep 2001.

PELAGIC CORMORANT *Phalacrocorax pelagicus*. Common breeder and visitor. The nesting population on SLI was estimated at 3700 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). During my study numbers at Gambell typically ranged up to 75 per day until early September, then increased as young fledged and migrants passed by, with totals of up to 100–250 per day the rest of the month. Maxima were of 275 birds on 9 Sep 2003 and 325 on 3 Oct 2003. Counts were complicated by locally feeding birds flying in every direction. Flocks of migrants passed south offshore at moderate altitude during the latter half of September and early October. In 2004 numbers remained through the end of October (H. Irrigoo pers. comm.). Elsewhere around SLI, one was at Northeast Cape 19 Nov 1964 and several were at North Punuk Island 4 Dec 1981 (Kessel 1989). Portenko (1981) cited multiple records on the Chukotskiy Peninsula near Provideniya in November, with one very late bird 22 Dec 1937. The species winters regularly north to the Pribilof Islands, with some birds as far north as leads and polynyas [open areas] in the pack ice allow (Kessel 1989). Fay and Cade (1959) reported that local residents said that a few birds may winter along the south shore of SLI.

ROUGH-LEGGED HAWK *Buteo lagopus*. Very rare migrant and breeder. One collected at Gambell 20 Sep 1934 and another there "a few days later" provided the first island records. Murie (1936:367) ascribed them to the Asian race *B. l. kamtschatkensis*, which breeds east to the Chukotskiy Peninsula and Anadyr River basin (Portenko 1981), but Fay and Cade (1959) questioned this determination. Gibson and Kessel (1997) listed all Alaska breeding birds as *B. l. sanctijohannis*. More recent fall records at Gambell are of one 11 Sep 1975, one seen flying in off the ocean from the north 6 Sep 1998, one 15–23 Sep 1999, and apparent family groups of three birds 23 Aug–18 Sep 2002 (ph. UAM) and of up to four birds 3–14 Sep 2003. The Rough-legged Hawk is rare in spring. There are a few nesting records from elsewhere on the island (Fay and Cade 1959).

GYRFALCON *Falco rusticolus*. Uncommon to rare migrant and visitor. During my study from one to four birds were seen annually through early October, with records

as early as 27 Aug (1993). White birds were present 11 Sep 1999, 6–12 Sep 2000, and sporadically from 9 Sep to 4 Oct 2003 and from 12 to 30 Sep 2004 (up to 2). Local residents report that this species occurs annually in October and later in the fall and winter, and there are numerous sight reports and several specimens taken on the island between late October and January, with most winter birds found along the island's south shore near polynyas (Fay and Cade 1959). Murie (1936) reported Gyrfalcons wintering around Gambell, hunting Long-tailed Ducks.

PEREGRINE FALCON *Falco peregrinus*. Rare migrant. From one to three birds were seen most years between mid-August and late September. The latest record is for 25 Sep (2002). One earlier bird was near Savoonga 1–9 Aug 2003 (L. Sheffield in litt.). The Peregrine Falcon is also a rare spring migrant.

SANDHILL CRANE *Grus canadensis*. Very rare migrant. The only recent records from Gambell proper are of two on 29 Aug 1996 (M. San Miguel in litt.), four on 30 Aug 1998, single birds on 8 Sep and 17 Sep 2001, and 12 on 18 Sep 2002. According to local residents, this species is of more regular occurrence elsewhere on SLI, where it is a fairly widespread breeder as well (Friedmann 1932, Fay and Cade 1959, Sauer and Urban 1964). A total of 74 was seen in the Savoonga area during August 2004, including flocks likely of migrants of 25 on 26 Aug and 17 on 31 Aug (L. Sheffield in litt.). The breeding population in northeast Siberia is increasing and spreading (A. Bräunlich in litt.), so the numbers of migrants on SLI may be increasing as well. Many of the birds on the Chukotskiy Peninsula depart (for the Seward Peninsula) during late August and the first week of September (Portenko 1981). The Sandhill Crane is a fairly common migrant at Gambell in spring.

BLACK-BELLIED PLOVER *Pluvialis squatarola*. Casual migrant. The only fall records are of one on 20 Aug 1967 (Sealy et al. 1971) and one juvenile on 7 Sep 1997 (D. Cunningham in litt., ph. UAM). This species is casual at Gambell in spring also and is a very rare migrant in the Bering Sea region (Kessel and Gibson 1978), though it nests very locally on the Seward Peninsula (Kessel 1989).

AMERICAN GOLDEN-PLOVER *Pluvialis dominica*. Very rare migrant. A record of up to two birds 23–25 Aug 1992 was followed by an additional seven records between 21 Aug (1999) and 8 Sep (2001), including a surprising six birds on 21 Aug 1999 (ph. UAM). Seven birds were near Savoonga during August 2004 (L. Sheffield in litt.). All fall records are of juveniles. The species is casual in spring.

PACIFIC GOLDEN-PLOVER *Pluvialis fulva*. Fairly common to common migrant. This species breeds on SLI (Fay and Cade 1959). The highest one-day count is of 95 on 3 Sep 2003. Most seasonal totals during my study ranged from 100 to 220, with 345 birds (mostly flyovers) in 2003. Adults moved south by early September, with 13 Sep (1999) the latest date for that age class. Juveniles occurred throughout the period and sometimes lingered until early October. For example, one was still present 2 Oct 1999, 16 remained on frozen marshes 29 Sep 2001 (ph. UAM), and 11 were present 1 Oct 2002 (ph. UAM), with five there the next day. Four lingering birds increased to 13 on 3 and 4 Oct 2003 (ph. UAM), with five remaining on 5 Oct.

LESSER SAND-PLOVER [MONGOLIAN PLOVER] *Charadrius mongolus*. Rare migrant. There are 11 fall records involving 18 juveniles (ph. Lehman 2000c, UAM), all since 1989, between 17 Aug (2004) and 6 Sep (1999). High counts are of four on 31 Aug 1989 and three on 2 Sep 2001. In addition, an adult was present 15–17 Aug 2004 (ph. UAM). The subspecies *C. m. stegmanni* ("*mongolus* group") nests in small numbers on the Chukotskiy Peninsula (Portenko 1981) and casually in western Alaska (Kessel and Gibson 1978).

COMMON RINGED PLOVER *Charadrius hiaticula*. Very rare migrant. Single juveniles were present 20 and 25 Aug 1999 (ph. Lehman 2000c) and 16–18 Aug

2000 (D. Cunningham in litt., Figure 7), and up to three were found 16–17 Aug 2004. This species is known to have bred elsewhere on SLI in 1960 (Sealy et al. 1971) and is thought to nest almost annually in the Gambell area, with definite nest records there in June 1997 (*FN* 51:1038) and June 2002 (ph. UAM). This species is a common breeder on the Chukotskiy Peninsula (Portenko 1981).

SEMIPALMATED PLOVER *Charadrius semipalmatus*. Rare migrant. One or two were seen during mid- or late August most years; five juveniles were seen 23–28 Aug 2001, and a flock of six was present 19 Aug 2004 (ph. UAM). The Semipalmated Plover is an uncommon breeder on SLI (J. L. Dunn in litt.), and nesting was recently confirmed on the Chukotskiy Peninsula (Karhu 2004).

[EURASIAN DOTTEREL *Charadrius morinellus*. Despite there being a number of records from Gambell in late spring, and the possibility that this species may nest casually on Sevuokuk Mountain (Kessel and Gibson 1978), there are no fall reports.]

WOOD SANDPIPER *Tringa glareola*. Casual visitor. A juvenile was present 28–30 Aug 1996 (FN 51:103). This species occurs more regularly in spring. It breeds northeast to the western Chukotskiy Peninsula (AOU 1998).

WANDERING TATTLER *Heteroscelus incanus*. Rare migrant. Only 12 individuals—all juveniles—have been recorded to date, none later than 28 Aug (2003). In addition, single specimens were collected elsewhere on the island 16 Jul 1955 and 8 Aug 1957 (Fay and Cade 1959). As with several other shorebirds, this species likely

Figure 7. The Common Ringed Plover is a rare but regular spring visitor and breeder at Gambell, but there are only a few fall records to date, one being of this fresh juvenile 16–18 August 2000. It differs from a juvenile Semipalmated Plover by its thinner bill (particularly the base), the lack of an obvious orbital ring, the lower border of dark feathering reaching the base of the bill at the gape, and a reduced amount of apparent toe-webbing. The difference in the call is critical to distinguishing the species in the field.

Photo by Don Cunningham

would prove to be more numerous if the island were covered from July to mid-August. It is very rare in spring.

GRAY-TAILED TATTLER *Heteroscelus brevipes*. Rare migrant. A total of 36 juveniles (ph. *W. Birds* 31(3): rear cover; UAM) has been found in fall since 1996, between 23 Aug (2003) and 14 Sep (1999). Seasonal totals range up to eight, in both 1998 and 2003. In addition, an adult was found 25–27 Aug 1998 (ph. UAM). One bird collected on an uncertain date in July 1932 (Kessel and Gibson 1978) was almost certainly a southbound adult. This species is rare in spring. It breeds northeast to the northern Anadyr River basin (AOU 1998).

TEREK SANDPIPER *Xenus cinereus*. Casual visitor. An adult was present 25–26 Aug 1994 (FN 49:85). In addition, one was at "Booshu Camp," ca. 29 km south of Gambell, 8 Sep 1975 (not "7 Sep"—AB 30:111). There are several spring records. The Terek Sandpiper breeds northeast to the Anadyr River basin (AOU 1998).

WHIMBREL *Numenius phaeopus*. Very rare migrant. There are three fall records of New World subspecies *N. p. hudsonicus:* up to three from 3 to 7 Sep 2000 (G. Rosenberg in litt.), one on 25 Aug 2001, and one on 1 Sep 2002 (ph. UAM). This race is numerous on the adjacent Alaska mainland (Kessel 1989). There are five fall records from Gambell of the Old World *N. p. variegatus,* which breeds as close as the Anadyr River basin (Portenko 1981). Six specimens (five at UAM, one at U.S. National Museum) have been collected on SLI, three at Gambell—11 Aug 1933, no precise date in Jul 1935, and 3 Aug 1935—two at Kukulik (near Savoonga) 2 and 5 Aug 1935, and one at Savoonga 23 Jul 1937 (Murie 1936, Gabrielson 1952, D. D. Gibson in litt.). In addition, single examples of *variegatus* were seen at Gambell 27–28 Aug 1993 (S. F. Bailey in litt.) and 15 Aug 2000 (D. Cunningham in litt., ph. UAM). Both subspecies have been recorded in spring as well.

BRISTLE-THIGHED CURLEW *Numenius tahitiensis*. Casual migrant. There were two on 25 Aug 1997 (FN 52:109), one on 28 Aug 1997 (D. Cunningham in litt., ph. UAM). In addition, a juvenile male was collected on the south side of the island 24 Aug 1957 (Fay and Cade 1959).

[BLACK-TAILED GODWIT *Limosa limosa*. Fay and Cade (1959) reported one on 5 Aug 1957 from the Boxer River valley, southwestern SLI. Kessel and Gibson (1978) did not believe that this report unequivocally eliminated the Hudsonian Godwit, *L. haemastica*.]

BAR-TAILED GODWIT *Limosa lapponica*. Very rare migrant. Single specimens of subspecies *L. l. baueri* were collected on 1 and 23 Aug 1930 (Friedmann 1932). Perhaps surprisingly, the only fall records at Gambell since then are of single, separate juveniles 24, 26, and 29 Aug 2003. Other individuals were collected at an unknown site on SLI 16 Aug 1929 (MVZ 66424, juvenile) and near Savoonga 31 Aug 1935 (Murie 1936). This species is rare in spring. It breeds in western Alaska (Kessel 1989) and is an uncommon-to-rare transient on other Bering Sea islands (e.g., Preble and McAtee 1923, Fay and Cade 1959, Winker et al. 2002).

RUDDY TURNSTONE *Arenaria interpres*. Uncommon migrant. Breeding has been documented at Gambell and elsewhere on SLI (Friedmann 1932, Fay and Cade 1959). The species is present in autumn in numbers that vary from year to year. Only five were seen in 1999 and four in 2002, but 61 were counted in 2001. Fay and Cade (1959:113) noted that "flocking began in the first week of August, and large flocks of winter-plumaged birds moving in a southeasterly direction were frequently seen near Siknik Camp [along the south shore of SLI] in the last week of that month." The latest record is 23 Sep (2001), perhaps the latest for the northern Bering Sea region.

[BLACK TURNSTONE *Arenaria melanocephala*. One was reported near Southwest Cape, SLI, 3 Aug 1942, and two were reported at Savoonga 13 Jul 1955, with

one of these birds collected (Fay and Cade 1959). This species is casual in spring at Gambell, on other Bering Sea islands (Winker et al. 2002), and on the Chukotskiy Peninsula (Karhu 2004).]

GREAT KNOT *Calidris tenuirostris*. Casual visitor. A juvenile was seen 22 Aug 1997, the first fall record for Alaska and only the second fall record for North America (ABA 2002). There are a number of spring records at Gambell (and from the Seward Peninsula), most from the late 1980s and early 1990s, with one in 2003 (NAB 57:390). This species is a very rare breeder in the alpine zone of the western Chukotskiy Peninsula (Portenko 1981).

RED KNOT *Calidris canutus*. Casual migrant. Single juveniles were found 26 Aug 1998 and 26–30 Aug 2000. The species is also casual in spring. All Alaska specimens involve the locally nesting *C. c. roselaari* (Gibson and Kessel 1997), although *C. c. rogersi* (presumably) breeds in small numbers on the Chukotskiy Peninsula (Karhu 2004).

SANDERLING *Calidris alba*. Rare migrant. Thirty individuals, all juveniles (ph. UAM), were seen in autumn between 1975 and 2004, with the highest count being of nine birds in 2003. The records fall between 25 Aug (2003) and 25 Sep (2003). In spring the Sanderling is casual.

WESTERN SANDPIPER *Calidris mauri*. Fairly common to common migrant through August, uncommon in early September, and rare in mid-September. Breeds commonly on SLI (Fay and Cade 1959). Numbers during early fall varied substantially from year to year. The maximum one-day counts were of 80 on both 20 Aug 1999 and 15 Aug 2004, although most daily maxima were of 10–25 birds. Two on 14 Sep (2001) were the latest. A late unidentified peep was seen in flight 22 Sep 2001. All Western Sandpipers seen from mid-August onward were juvenile.

RED-NECKED STINT *Calidris ruficollis*. Rare migrant. Records of juveniles are as follows: one on 25 Aug 1992, one on 26 Aug 1998, up to three from 23 to 28 Aug 2001 (ph. UAM, Figure 8), up to two from 24 to 26 Aug 2002 (ph. UAM), and three on 25 Aug 2003. One bird published as occurring at Gambell 14–15 Aug 1997 (FN 52:109) was actually on the Pribilof Islands. In addition, an adult was at Kongkok Bay, southwestern SLI, 28 Jul 1972 (Kessel and Gibson 1978), and a juvenile was near Savoonga 7 Aug 2003 (L. Sheffield in litt.). This species is also a rare but regular spring migrant and possible breeder on the island (Kessel and Gibson 1978, J. L. Dunn in litt.). It breeds regularly on the Chukotskiy Peninsula (Portenko 1981), where the latest record of an adult is 6 Aug (1938) and of a juvenile is 28 Aug (1933 and 1961).

TEMMINCK'S STINT *Calidris temminckii*. Casual visitor. There is one fall record, of a juvenile 28 Aug 1999. The species is very rare or casual in spring. It nests north to the Chukotskiy Peninsula (Portenko 1981).

LONG-TOED STINT *Calidris subminuta*. Casual visitor. One juvenile 21 Aug 1999 (ph. UAM) may represent the only fall record for the northern Bering Sea (NAB 54:90). There are a number of spring records at Gambell. This species breeds northeast to the southern Anadyr River basin (AOU 1998).

[LEAST SANDPIPER *Calidris minutilla*. L. Sheffield (in litt.) reported one at Kitnik, just east of Savoonga, 2 Aug 2004. This species is very rare at Gambell in spring. It nests in western mainland Alaska and is an uncommon-to-rare breeder from St. Matthew Island south to the eastern Aleutians (Winker et al. 2002).]

BAIRD'S SANDPIPER *Calidris bairdii*. Rare migrant. Fay and Cade (1959:115) reported that "in August flocks of two to six birds...were sometimes seen near Gambell and on the beaches of the south coast," and that "three adult males taken on the north shore of Troutman Lake, August 8, 1953, are in the UBC collection." The only

recent sightings are of five birds between 23 Aug and 3 Sep 2003 (ph. UAM) and six between 15 Aug and 7 Sep 2004 (ph. UAM); all were juveniles. Baird's Sandpiper is a rare migrant in spring as well. Fay and Cade (1959) believed that this species possibly nested on SLI, and Sauer and Urban (1964) reported a breeding record there in June 1960. Small numbers breed on the Chukotskiy Peninsula (Karhu 2004).

PECTORAL SANDPIPER *Calidris melanotos*. Uncommon to common migrant through mid-September, uncommon to rare in late September. During my study seasonal totals ranged from 31 in 2002 to 375 in 1999 and 460 in 2003. The maximum one-day counts were of 50 on 26 Aug 2001 and 300 on 26 Aug 2003. L. Sheffield (in litt.) saw up to several hundred daily around Savoonga during August 2003, with the earliest individual on 5 Aug. Friedmann (1932) cited a SLI specimen from 13 Jul 1899 and a report of multiple birds on 29 July (year?). I saw mainly juveniles and only a few adults—in late August—although more adults probably occur in July and early August. The species' latest date (for a juvenile) was 29 Sep (2001).

SHARP-TAILED SANDPIPER *Calidris acuminata*. Uncommon to fairly common migrant. Dates range from 21 Aug (2004) to 29 Sep (2001). Seasonal totals include 36 in 1999, 40 in 2000, 55 in 2001, 74 in 2003, and 84 in 2004—but only four in 2002. Single-day maxima were of 34 on 25 Aug 2003 and 30 on 3 Sep 2004. All birds were juveniles (Figure 9). The first SLI records were of eight specimens taken elsewhere between 27 Aug and 24 Sep 1935 (Murie 1936). This species is casual in spring. It breeds west of the Chukotskiy Peninsula, where it is a fall migrant only (Portenko 1981).

ROCK SANDPIPER *Calidris ptilocnemis*. Uncommon to fairly common migrant, common as a nesting species (Fay and Cade 1959). I found small-to-moderate numbers of Rock Sandpipers, both adults and juveniles (Figure 10), through mid-September, but the species was uncommon in late September and rare in early October. The largest numbers and later records came from the rocky headlands south of the village; 40 birds were counted 8 Sep 1975. The latest record is of one at Ooynik Point 7 Oct 2003. The local subspecies is *C. p. tschuktschorum* (Gibson and Kessel 1997).

DUNLIN *Calidris alpina*. Uncommon to fairly common migrant, common as a nesting species (Fay and Cade 1959). Numbers at Gambell vary substantially from fall to fall, with 180 in 2001 but only 50 in 2002. The one-day maximum is of 50 on both 27 Aug 2000 and 24 Aug 2001, and the latest record is 26 Sep (2001). Most birds were juveniles, but a number of adults were seen as well, primarily in August. Flocks of 75–100 were noted in late August along the south shore of SLI (Fay and Cade 1959). The latest record for the Chukotskiy Peninsula is 1–3 Oct 1933 (Portenko 1981).

BUFF-BREASTED SANDPIPER *Tryngites subruficollis*. Casual visitor. There are three records of single juveniles: 23 Aug 1992, 29 Aug 2000 (ph. NAB 55:89), and 17 Aug 2004 (ph. UAM). There are also at least two spring records (J. L. Dunn in litt.). This species nests west to northern Alaska (Kessel and Gibson 1978).

[RUFF *Philomachus pugnax*. A juvenile was at Savoonga 25 Aug 2004 (NAB 59:130, ph. UAM). There are many spring and early-summer records at Gambell and elsewhere on SLI. This species nests regularly northeast to the Anadyr River basin (Vaurie 1965) and casually to the Chukotskiy Peninsula (Portenko 1981) and northwestern Alaska (Gibson 1977).]

LONG-BILLED DOWITCHER *Limnodromus scolopaceus*. Uncommon to fairly common migrant. Seasonal totals vary substantially from year to year, e.g., 115 in 2003 and 109 in 2004, but only 17 in 2002. The highest one-day count was of 40 on 29 Aug 2000. All birds to date have been juvenile. The latest records are 21–24 Sep (1999) and 23 Sep (2001). Small numbers have been found nesting on SLI

(Fay and Cade 1959, Sealy et al. 1971), and the species is a regular breeder on the Chukotskiy Peninsula (Portenko 1981, Karhu 2004).

COMMON SNIPE *Gallinago gallinago*. Casual visitor. This Old World species has been recorded twice in fall: 6–13 Sep 2000 (G. Rosenberg in litt.) and 25 Sep 2001. The latter record is probably late for this latitude. In addition, an unidentified snipe was at Savoonga 25 Aug 2004 (L. Sheffield in litt.). The Common Snipe is casual in spring; it breeds northeast to the interior of the Chukotskiy Peninsula (Portenko 1981), whereas Wilson's Snipe (*G. delicata*) is found on the nearby Alaska mainland (Kessel 1989) and also has occurred at Gambell casually in spring.

RED-NECKED PHALAROPE *Phalaropus lobatus*. Uncommon breeder and migrant. The counts during late August and early September represent the tail end of the migration: only 1–15 birds were seen most years. There are no records after 7 Sep (1992). Reports of large numbers of this species from the northern Bering and southern Chukchi seas in late September (Kessel 1989) almost certainly refer to Red Phalaropes. The latest record for the Chukotskiy Peninsula is 2 Sep 1932 (Portenko 1981). The Red-necked Phalarope is known to nest on SLI (Fay and Cade 1959).

RED PHALAROPE *Phalaropus fulicarius*. Uncommon to abundant migrant. The waters off Gambell appear to be a major autumn staging area for this species during some years. As many as 10 Gray Whales (*Eschrichtius robustus*) can be seen here per day, illustrating a probable abundance of plankton, their shared food source. Large numbers of birds have been found along the east coast of the Chukotskiy Peninsula in July and August (Portenko 1981). The largest concentrations of phalaropes were noted close to shore at Gambell on days with strong winds. Small-to-moderate numbers were seen from mid- to late August, but these can build during September. Most birds in September and October were juvenile, but some molting and basic-plumaged adults remained then as well. In 1999, a total of 34,500 birds was seen, with 25,000 on 30 Sep. In 2001, 40,000 were counted during a storm on 9 Sep (ph. UAM), and 20,000 were seen 18 Sep. On 10 Sep 2003, 15,000 were counted. Hundreds of birds were still present in early October 1999 and 2001. In contrast, a mere 21 were seen through early October in 2002, and only 38 were counted between mid-August and early October 2004. Good numbers of phalaropes were present during very strong winds in mid-October 2002 and 2004, with about 100 birds remaining 30 Oct 2004 (H. Irrigoo pers. comm.). A few have remained near Provideniya up to the first few days of November, with five there 6 Nov 1937 (Portenko 1981). This species also occurs in variable, though lower, numbers in spring. Fay and Cade (1959) listed single breeding records for SLI in 1950 and 1954.

POMARINE JAEGER *Stercorarius pomarinus*. Fairly common to common migrant through mid-September, uncommon to fairly common through early October. Large numbers of birds were seen around the east end of SLI on 6 Aug 1942, "straggling along the coast singly and in groups of five or six." "During August 1956 and 1957, a continual overland flight of all three species of jaegers was observed in the Koozata Lagoon and River area, the direction of movement being from northeast to southwest for the first three weeks and northwest to southeast in the last week of the month" (Fay and Cade 1959:117). During my study small numbers were seen most days at Gambell, with occasional substantial flights of migrants past the point, establishing some of the highest counts for western Alaska: up to 500 on 25 Aug 1992 and 6 Sep 1999; the season's total in the latter year was 625. B. L. Sullivan counted 770 during the evening of 29 Aug and morning of 30 Aug 2004 (NAB 59:130). The next largest counts included a total of 285 on 6 and 7 Sep 2000 and 175 on 11 Sep 2003. No major pushes were noted in some years, when daily maxima did not exceed 20 birds. Juveniles have not been seen most years until the third week of September, but two arrived 5 Sep 2003. A flight of 35 birds on 25 Sep 2002, 90% of them adults, was unusual for the late date (NAB 57:103). Small numbers (up to 7 per day,

including adults) were still present at my early-October departure, with high counts of 22 birds on 6 Oct and 11 on 7 Oct 2003. Two juveniles were collected somewhere on SLI 15 Oct 1928 (Fay and Cade 1959), and one was seen in the Bering Strait area 18 Oct 1970 (Watson and Divoky 1972). This species nests north of the Bering Strait; in 1953, a pair performing courtship displays was near Sevuokuk Mountain from May to August, but nesting was not confirmed (Fay and Cade 1959).

PARASITIC JAEGER *Stercorarius parasiticus*. Fairly common to common migrant through early September, uncommon in mid-September. My single-day maxima were of 22 birds on both 27 Aug 2002 and 11 Sep 2003. The highest seasonal totals were of 70 in 2002, 2003, and 2004. All age classes occurred. The only records after mid-September were of single juveniles 25 Sep 2001 and 1 Oct 2004; the latter is probably the latest date for the northern Bering Sea. Portenko (1989) reported one from the eastern tip of the Chukotskiy Peninsula 27 Sep 1933; Watson and Divoky (1972) reported one from the Chukchi Sea 30 Sep 1970. This species is not known to breed on the Bering Sea islands (Winker et al. 2002).

LONG-TAILED JAEGER *Stercorarius longicaudus*. Uncommon migrant. Seasonal totals include 18 in 1999 and 17 in 2002 but only six in 2001 and 2004 and four in 2003. The maximum one-day count was of 15 on 27 Aug 2002. An adult on 15 Sep 2001 was the latest. The latest dates for the Chukotskiy Peninsula are 17 and 18 Sep 1933 (Portenko 1989). Since 1997, almost all birds at Gambell have been adults, a few have been subadults, but none have been juvenile. Clearly, more birds would be found if observers were present earlier in the season; for example, 50–75 adults were migrating over the waters between King and St. Lawrence islands between 15 and 21 Aug 1986 (Kessel 1989). Sealy et al. (1971:331) termed this species a "known or probable breeder" on SLI.

BLACK-HEADED GULL *Larus ridibundus*. Casual visitor. An adult 26 Aug–4 Sep 2001 (ph. UAM) was the first in fall for the northern Bering Sea (NAB 56:90–91). There are over ten spring records at Gambell (J. L. Dunn in litt.). This species breeds northeast to the Kolyma River and northern Kamchatka (AOU 1998).

MEW GULL *Larus canus*. Casual visitor. There are two records of juveniles identified as *L. c. kamtschatschensis*: 25–26 Aug 1997 (ph. FN 52:141) and 24–27 Aug 2002 (ph. UAM). This race has occurred casually in spring also. It breeds northeast to the Anadyr River basin (AOU 1998). One juvenile *L. c. brachyrhynchus* was identified in fall as well, 21 Aug 1999 (ph. UAM); that subspecies breeds on the Alaska mainland (Kessel 1989).

HERRING GULL *Larus argentatus*. Common visitor. Subspecies *L. a. vegae* nests on SLI (Fay and Cade 1959), with 860 breeding birds estimated in 1996 and 1997 (USF&WS 2003, unpubl. data). In fall, during my study, it occurred at Gambell daily in moderate numbers, with some counts up to 50–60 birds per day; 75 were noted on 4 and 14 Sep 2001 and 6 Sep 2003. All age classes occurred regularly (Figure 11). Numbers declined after mid-September, with high counts in late September and early October typically around 5–15 birds per day. An apparent exodus of large gulls 3–4 Oct 2003 brought 139 heading west past Gambell, and up to nine birds were still present on 7 and 8 Oct. Portenko (1989) listed 9 Oct (1934) as the latest date for the Chukotskiy Peninsula, and Watson and Divoky (1972) saw six in the Bering Strait 18 Oct 1970. There are at least five reports of North American *L. a. smithsonianus*, very rare in the Bering Sea: a subadult 4–10 Sep 2000 (G. Rosenberg in litt., ph. UAM) and single adults 27 Sep 2001 (ph. UAM), 9 Sep 2002, 27 Aug 2003, and 24 Sep 2004. Several additional sightings of probable juveniles and subadults of *smithsonianus* at Gambell are fraught with the uncertainties associated with hybrid gulls. Some authors (e.g., Yésou 2002, Olsen and Larsson 2003) have ranked *vegae* as a full species.

THAYER'S GULL *Larus thayeri*. Casual visitor. An adult 15 Sep 2001 provided one of few records for the Bering Sea (NAB 56:91).

SLATY-BACKED GULL *Larus schistisagus*. Uncommon visitor. Seen on about half the days in fall at Gambell, with seasonal totals varying from 9 to 17 individuals and some birds present for extended periods. The highest one-day counts were of five on 27 Aug 1993 and 25 Aug 1999. All age classes except juvenile were seen, but only several one-year-old birds were identified. The species is less regular in late September and early October than earlier in the fall. The latest date at Gambell is 5 Oct (2003). This species breeds along the Russian coast to the northeastern Koryak Highlands (Vaurie 1965); there is one definite (McCaffery et al. 1997) and a few possible (e.g., Winker et al. 2002) nesting records in Alaska.

GLAUCOUS-WINGED GULL *Larus glaucescens*. Fairly common visitor. Apparently increasing in numbers. Fay and Cade (1959:119) reported several "young of the year" in August 1957 and that "six immature specimens" were taken in earlier years. In recent years, seen daily, mid-August to early October, with most counts of 5–20 birds and a few tallies of up to 30. In 2002, unprecedented numbers for the northern Bering Sea included 74 birds heading south into southwest winds on 10 Sep; about 90% of those birds were juveniles. In 2003, up to 25–30 birds were seen daily between 26 Aug and 8 Oct, with 40 on 30 Sep; on 3 and 4 Oct an apparent exodus of large gulls brought record counts of 104 and 89 Glaucous-winged, respectively, heading west past Gambell. As in 2002, most birds in 2003 were juveniles, although all age classes were represented. Late departure dates are not known. This species has expanded its breeding range northward in the Bering Sea, and since 1966 it has nested on St. Matthew Island (Winker et al. 2002). Numbers at Gambell have recently increased substantially in spring also (J. L. Dunn in litt.).

GLAUCOUS GULL *Larus hyperboreus*. Common breeder and visitor. This species nests about sea-cliffs on the island (Fay and Cade 1959), and in 1996 and 1997 the nesting population was estimated at 650 birds (USF&WS 2003, unpubl. data). In fall at Gambell this species was present daily in numbers typically ranging between 100 and 250 individuals, occasionally up to 400. The highest counts were of 750 on 24 Aug 1999 and 600 on 15 Sep 1999. All age classes occurred. Glaucous Gulls linger into winter as long as any water remains open, including at polynyas around SLI (Kessel 1989). Small numbers remain on the Seward Peninsula and Chukotskiy Peninsula into November, with the latest records being 21 Nov and 7 Dec 1912 in the Bering Strait (Kessel 1989, Portenko 1989). Glaucous Gulls nesting on SLI are probably *L. h. pallidissimus*, although *L. h. barrovianus*, breeding on the Alaska mainland, might occur as a rare visitor.

SABINE'S GULL *Xema sabini*. Rare and somewhat irregular migrant. Most years during my study <15 were seen, and none at all were seen in 2002, 2003, and 2004. In late August 1994 the species was seen daily, with 20 birds noted 24 Aug. In 2001, a total of 48 was tallied, with several birds feeding around the point for extended periods. The latest record of an adult is 10 Sep (2001). Juveniles remained through 24 Sep 1999 and 27 Sep 2001, and another was found on 1 Oct 2001 (D. Cunningham in litt, ph. UAM). Friedmann (1932) reported that five specimens had been taken at Gambell in July and August (year?), and Fay and Cade (1959:121) noted "a few individuals and small groups near Gambell, mostly in August." This species occurs regularly during spring in small numbers.

BLACK-LEGGED KITTIWAKE *Rissa tridactyla*. Common to abundant breeder and visitor. This species breeds in large numbers on the island's sea-cliffs (Fay and Cade 1959), and in 1996 and 1997 the nesting population was estimated at 47,000 birds (USF&WS 2003, unpubl. data). For much of the fall, during my study, daily counts at Gambell ranged from 1000 to 3000, with occasional counts of up to 4000,

and a few over 5000. About 1% to 2% of the birds were two-year-olds, with at least 5% that age during 2004. The first juveniles did not usually appear off the point until early September (earliest arrival 30 Aug 1996). The species was still very common in early October; in fact, many of the largest counts came from this part of the season, including several days with 10,000 birds, 20,000 on 3 Oct 2003, and 30,000 on 2 Oct 2004. The species was common in the Bering Strait area on 18 Oct 1970 (Watson and Divoky 1972). Late departure dates are unknown, although numbers were still present at Gambell 31 Oct 2004 (H. Irrigoo pers. comm.), and Fay and Cade (1959:121) reported "several immatures seen near Gambell" 10 Nov 1957. Portenko (1989) cited an exceptionally late record for 25 Nov 1937 near Provideniya. This species winters north to the southern Bering Sea (Kessel 1989).

ROSS'S GULL *Rhodostethia rosea*. Rare but regular late-fall and early-winter migrant and visitor. Up to four adults were foraging around the point from 28 Sep to 10 Oct 2001 (ph. UAM, Figure 12), following the passage of an arctic front. These birds were almost record-early for anywhere south of the Bering Strait. Gambell residents report that this species occurs in small numbers (up to a dozen or so) in the surf near the point some time in November and/or December of most years. Fay and Cade (1959:121) noted that, according to hunters, the species is "not seen every year" but that its "usual time of arrival [is] in late November and December when great chunks of polar pack ice drift down from the Chukchi Sea." Sealy et al. (1971) saw several near Gambell in early December 1966, and a specimen was collected in December (no more precise date) 1973 (UAM 3552; Kessel and Gibson 1978).

[IVORY GULL *Pagophila eburnea*. No fall records. Local residents reported that this species does not arrive until the pack ice forms and hunters kill seals on the nearby floes, usually during winter and spring. It has declined in recent years during late spring, when it formerly occurred somewhat regularly through late May (J. L. Dunn in litt.).]

ARCTIC TERN *Sterna paradisaea*. Uncommon migrant. Some 190 birds were estimated nesting on SLI in 1996 and 1997 (USF&WS 2003, unpubl. data). During my study numbers of fall migrants at Gambell varied substantially from year to year, from a high of 50 birds in 1994 and 25 in 2001 to none in 2002, four in 2003, and two in 2004. Some birds fed around the point area for many days. Most were juveniles, but a few adults were seen as well (two as late as 4 Sep 2000 [G. Rosenberg in litt.]). Records of juveniles after early September were of one on 11 Sep and two on 13 Sep 1999, and four on 15 Sep 2001, with three remaining to 17 Sep, two to 18 Sep, and one to 19 Sep (ph. UAM). The last are near-record-late dates for the central and northern Bering Sea. The species is rare at Gambell in spring.

DOVEKIE *Alle alle*. Very rare fall visitor. This species breeds uncommonly at Gambell (Kessel and Gibson 1978). Eleven breeding birds were counted on SLI in 1996 and 1997 (USF&WS 2003, unpubl. data), and 11 were counted on the slopes of Sevuokuk Mountain alone in late May 2003 (NAB 57:390). In fall, the species departed the nesting cliffs before observers arrived in late August, and the only fall sightings were of single birds off the point 5 Sep 1992, 28 Aug 1993, 22 Aug 1994, and 31 Aug 1998. One was 24 km south of Gambell 9 Sep 1975 (Kessel and Gibson 1978). Caution in identifying this species in autumn is warranted because of possible confusion with the juvenile Least Auklet.

COMMON MURRE *Uria aalge*. Abundant breeder and visitor through early September, uncommon to rare thereafter. Large numbers of Common Murres breed on SLI (Fay and Cade 1959), with estimates of 162,000 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). During my study up to 25,000 flew past the point daily through the end of August. A total of 75,000 birds was estimated 15 Aug 2004. Numbers declined fairly rapidly as young fledged in early September, and by

mid-September the maximum daily counts were of fewer than 100 birds. By late September, in most years, only the occasional individual was seen. In 2003, numbers increased rapidly again in late September and peaked at up to 2500 per day from 29 Sep to 7 Oct. Almost all late-season birds were in basic plumage and headed past the point into the wind. It is possible that the species disappears from the Gambell area after nesting is completed so that birds can molt elsewhere, perhaps in more protected waters south of the island. This species winters north to the edge of the pack ice (Kessel 1989), and Fay and Cade (1959) suggested that small numbers may winter around SLI.

THICK-BILLED MURRE *Uria lomvia*. Abundant breeder and visitor through early September, uncommon to rare thereafter. Large numbers of Thick-billed Murres breed on SLI (Fay and Cade 1959), with estimates of 104,000 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). Up to 15,000 flew past the point daily through the end of August; maxima included 20,000 on 21 Aug 1999 and 25,000 on 15 Aug 2004. Numbers declined rapidly in early September as young fledged, and daily counts after 15 Sep typically did not exceed ten birds. In 2001, a late surge in numbers after 25 Sep brought up to 40 per day past the point, with 135 counted on 28 Sep; similarly, numbers increased dramatically in late September 2003, peaking at 1450 birds on 2 Oct. Almost all were seen flying into the wind, and these included birds in both alternate and basic/juvenal plumage. This species is known to winter at the southern edge of the pack ice, with a few farther north in open leads and polynyas (Kessel 1989); it is the only murre occurring regularly along the island's coast in winter (Fay and Cade 1959). There are records from the Provideniya area for 11 and 22 Dec 1937 and additional winter reports from the north shore of the Chukotskiy Peninsula (Portenko 1989).

BLACK GUILLEMOT *Cepphus grylle*. Rare visitor. Through my study, one or two birds were seen most years, usually during the latter half of September. One found freshly dead in late August 1992, one 23–25 Aug 1999, two on 30 Aug 2000, and one on 27 Aug 2004 were slightly early. A total of four birds between 17 and 30 Sep 1999 was the high seasonal count. A majority of the birds were adults still in full or almost full alternate plumage. Two specimens were taken in the Gambell area 28 Nov 1929 (UAM 5369, 5370; Kessel 1989), and one was collected there 23 Nov 1930 (Friedmann 1932). This species winters in leads and polynyas in the pack ice in the northern Bering Sea (Kessel and Gibson 1978). Small numbers are seen annually at Gambell in spring through early June; most of these latter birds are subadults (J. L. Dunn in litt.). Bédard (1966) considered this species a probable nester on SLI, although no breeders have been found on the island since then (USF&WS 2003, unpubl. data).

PIGEON GUILLEMOT *Cepphus columba*. Common breeder and visitor. This species nests on SLI (Fay and Cade 1959), with estimates of 5100 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). Autumn counts at Gambell typically ranged from 50 to 200 per day. This species molts into basic plumage earlier than does the Black Guillemot, although one individual in full alternate plumage was seen 28 Sep 2001. Substantial numbers occur during the latter half of September and early October, flying into the wind on days with strong northerly winds. Such counts included 325 individuals on 27 Sep 2001, 225 on 28 Sep 2001, and 195 on 26 Sep 2003. Pigeon Guillemots were still numerous in early October (e.g., 51 on 6 Oct and 28 in one hour 8 Oct 2003). Friedmann (1932) reported a specimen collected at Gambell 11 Oct 1930, the latest record for the northern Bering Sea (Kessel 1989). This species winters south of the pack ice (Kessel 1989). A substantial percentage of the Pigeon Guillemots at SLI in fall have at least one-third of their underwing whitish, causing some of them to be misidentified as Black Guillemots.

MARBLED MURRELET *Brachyramphus marmoratus*. Casual visitor. One was at the point 5 and 7 Oct 2003. This species was reported elsewhere on SLI 29 Jul 1964 (three birds, one collected; Bédard 1966) and 1 Aug 1986 (three birds off the east end of the island; Kessel 1989). There are also several recent spring records at Gambell. Marbled Murrelets are not known to nest north of the Aleutian Islands and Alaska Peninsula (Kessel and Gibson 1978).

KITTLITZ'S MURRELET *Brachyramphus brevirostris*. Very rare visitor. Recent fall records are for 28 Aug 1992, 3 and 14 Sep 1999, 26 Sep 2002, and 5 Sep (two) and 2 Oct 2003. Fay and Cade (1959:123) reported that "in 1950 about fifty birds in small flights were seen passing Chibukak Point [i.e., the point of Northwest Cape] between August 10 and 15." This count is exceptional if correct. Two Kittlitz's Murrelets were east of Savoonga 17 Aug 2004 (L. Sheffield in litt.). This species also is very rare in spring. It breeds very locally along the coasts of the Bering and Chukchi seas (Kessel 1989). Fay and Cade (1959) reported it as a probable breeder on SLI. On the Chukotskiy Peninsula it is a rare breeder, with most sightings in August (Portenko 1989).

ANCIENT MURRELET *Synthliboramphus antiquus*. Rare visitor. Since 1994 there have been at least nine fall records involving 23 individuals of this visitor from the south, between 22 Aug (1994) and 1 Oct (2004; ph. UAM). A surprising seven birds were tallied 21 Sep 2001. Between 1946 and 1966, during late July and early August, there were three additional records from elsewhere around the island (Sealy et al. 1971). This species is also rare in spring and early summer. It breeds north to the Aleutians (Sowls et al. 1978) and probably bred at the Pribilofs in 2004 (G. Bieber pers. comm.). Many birds disperse north into the southern Bering Sea, especially during August and September (Kessel 1989).

PARAKEET AUKLET *Aethia psittacula*. Common to abundant breeder and visitor through late August, uncommon to rare thereafter. This species nests on SLI (Fay and Cade 1959), with estimates of 4000 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). From mid-August to the beginning of September counts typically ranged from several hundred to 1000 per day, with 2000 per day noted in late August 1996. The occasional juvenile making its first flight to the sea was found crash-landed around the village. Numbers dropped off rapidly after that as young fledged and birds moved south or locally offshore. The species was rare during the latter half of September and early October, when on most days none were seen. High counts late in the season included a total of 35 from 24 to 28 Sep 2003 and 15 on 5 Oct 2003. The latest date for Gambell is 8 Oct (2003). Watson and Divoky (1972) saw one Parakeet Auklet in the Bering Strait area 18 Oct 1970. This species winters north to the Pribilof Islands (Kessel 1989).

LEAST AUKLET *Aethia pusilla*. Abundant breeder and visitor. Huge numbers nest on SLI (Fay and Cade 1959), with an estimate of 1,800,000 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). Fall counts from the point ranged up to 60,000 per day in mid-August and up to 20,000 per day in late August, although in 2002 most birds apparently finished nesting earlier than usual and the maximum count per day was only 70. Each year a few juveniles making their first flight to the sea were found crash-landed around the village. Numbers dropped off rapidly by early September, and overall counts into mid-September usually did not exceed 100–200 per day. On most days during the latter half of the month none were seen. Although most Least Auklets probably headed south for the winter during the first half of September, moderate numbers may have remained offshore later into the season, as they were seen off the point on some days, most often flying into the wind during onshore winds (e.g., 1000 on 21 Sep 2001, 2500 on 16 Sep 2003, and 300 on 5 Oct 2003). The latest record at Gambell is 7 Oct (2003; 15 birds). One was at Nome 17 Oct 1913 (Kessel 1989). Storm-deposited birds were at Nome and Kotzebue 18–19 Oct 2004 (NAB 59:130). This species is known to winter north to the Pribilof Islands (Kessel 1989).

CRESTED AUKLET *Aethia cristatella*. Abundant breeder and visitor. Huge numbers nest on SLI (Fay and Cade 1959), with an estimate of 1,500,000 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). Counts from the point between mid-August and the beginning of September were often in the range of 100,000–400,000 per day, with up to 600,000 per day estimated in late August 1999 and up to 800,000 per day in mid-August 2004. The largest numbers of birds pass by during the late afternoon and evening hours; early-morning flights on 1 Sep 2001 and 15 Aug 2004 brought 100,000 and 150,000 birds, respectively, in just one hour. Numbers dropped off rapidly in early September as young fledged; a few juveniles were found crash-landed around the village annually. Beginning mid-September, as birds migrated south or moved locally offshore, totals often were less than 50 per day and the species was missed many days; by late in the month it was often absent. Occasional late flights brought brief surges in numbers, such as 1050 on 27 Sep 1999, 780 on 25 Sep 2003, and 275 on 5 Oct 2003. Recorded through 8 Oct (2003). One was in Norton Sound 13 Oct 1879 (Nelson 1887). Birds were found at sea near Provideniya throughout November 1937, with the latest on 30 Nov (Portenko 1989). Crested Auklets winter north to the Pribilof Islands (Kessel 1989).

HORNED PUFFIN *Fratercula corniculata*. Abundant breeder and visitor through early September; common to uncommon thereafter. Large numbers nest on SLI (Fay and Cade 1959), with estimates of 5000 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). This estimate appears to have been low, and the breeding population on Sevuokuk Mountain increased visibly over the past decade. The two puffin species are the last alcids to fledge young, so the numbers of birds typically did not begin to decline until later in September. Counts often reached 2500 per day, with up to 5500 per day estimated in 1999 and 5000 seen 7 Sep 2001. In late September, daily maxima were often of 10–50 birds. In 2002, 2003, and 2004, many alcids appeared to fledge early, and few Horned Puffins were seen after mid-September. During most years, only a few immatures and birds in nonbreeding plumage were seen from the point. Recorded through 3 Oct (1999; 30 birds) and 4 Oct (2003; three birds). One was in the Bering Strait area 18 Oct 1970 (Watson and Divoky 1972), and two were in Kotzebue Sound 28 Oct 1984 (Kessel 1989). This species winters north to the Pribilof Islands (Kessel 1989).

TUFTED PUFFIN *Fratercula cirrhata*. Abundant breeder and visitor through early September, common to uncommon thereafter. Large numbers nest on the island (Fay and Cade 1959), with estimates of 8200 birds in 1996 and 1997 (USF&WS 2003, unpubl. data). Numbers stayed fairly constant from mid-August until early or mid-September. Most daily maxima were in the 200–1000 range, with 3000 on 10 Sep 2001 and 15 Aug 2004. From mid- to late September, daily counts typically ranged between 10 and 50 birds but went down to zero as well, particularly if the nesting season was early, as it was in 2002, 2003, and 2004. During most years, only a few immatures and birds in nonbreeding plumage were seen from the point, although 20 such individuals were counted 25 Aug 2004. Recorded through 4 Oct (2003; four birds). In 1931 this species lingered near Provideniya "until the bay froze" (Portenko 1989). Most Tufted Puffins from the Bering Sea winter in the North Pacific, with small numbers as far north as the southern Bering Sea (Kessel 1989).

[ROCK PIGEON *Columba livia*. A domestic pigeon wearing a leg band (i.e., a homing pigeon) was reported by Gambell residents sometime during autumn 1964 (Sealy et al. 1971).]

ORIENTAL CUCKOO *Cuculus saturatus*. Casual visitor. Two fall records: 23 Aug 1999 (ph. Lehman 2000b,c, UAM; Figure 13) and 15 Sep 2002 (ph. UAM; hepatic morph). There are also two July specimens from Gambell, both examples of subspecies *C. s. horsfieldi:* 1 Jul 1930 (originally identified as a Common Cuckoo, *C. canorus bakeri;* Friedmann 1932) and 14 or 15 Jul 1935 (ABA 2002). Interestingly,

all late-spring cuckoos at Gambell identified to species have been Common Cuckoos (*C. canorus*), whereas the four from mid-summer and fall have been Oriental. This species breeds northeast to the Anadyr River basin (AOU 1998).

SNOWY OWL *Bubo scandiacus*. Uncommon visitor. Nests on SLI away from Gambell (Fay and Cade 1959). "From October to May these birds are rare inland and on the north coast, but they are common on the west and south coasts where they prey almost exclusively on waterfowl...Throughout this period they range far out on the sea ice wherever there is open water" (Fay and Cade 1959:126). Local residents stated that this species occurs around Gambell many years during the late fall and winter. Most birds arrive beginning in October; earlier records include one bird collected 18 Sep 1930 (Friedmann 1932), one from 23 to 26 Aug 1994, and one on 20 Sep 2003. The Snowy Owl is casual at Gambell in late spring.

SHORT-EARED OWL *Asio flammeus*. Very rare visitor. Murie (1936:374) noted that a specimen "was obtained from an Eskimo boy at Gambell on 23 Nov 1934"; this is an exceptionally late date. The recent records are 4–9 Sep 1992 (D. Sonneborn in litt.), 29 Aug 1996 (M. San Miguel in litt.), 1 Oct 1999, and 15 Sep 2002. This species occurs almost annually in spring (J. L. Dunn in litt.). Sealy et al. (1971) mentioned very rare breeding records for the island, including several nests at Gambell in 1959 and 1960.

BOREAL OWL *Aegolius funereus*. Casual visitor. There are three specimens of the North American subspecies *A. f. richardsoni* from SLI, one of which was collected at Gambell 10 Nov 1955; the other two are from March, one at Gambell and one at Savoonga (Fay and Cade 1959).

NORTHERN SAW-WHET OWL *Aegolius acadicus*. Accidental. One individual of the nominate race was found 16 Oct 1972 (UAM 2689; Kessel and Gibson 1978). This species is not known to nest north of south-coastal or perhaps central Alaska (Kessel and Gibson 1978).

FORK-TAILED SWIFT *Apus pacificus*. Accidental. One was photographed 15 Sep 1993 (ABA 2002, ph. UAM). This is the sole record for the northern Bering Sea. The species breeds northeast to the Koryak Highlands (Dement'ev and Gladkov 1951, Vaurie 1965).

[HUMMINGBIRD SP. Casual visitor. There are three unconfirmed reports by local residents of unidentified hummingbirds seen elsewhere on SLI: two undated, obscure reports (Fay and Cade 1959) and one of a probable Rufous Hummingbird (*Selasphorus rufus*) in September 1960 (Sealy et al. 1971). That species breeds north to south-coastal Alaska (Kessel and Gibson 1978).]

EURASIAN WRYNECK *Jynx torquilla*. Accidental. One was present 2–5 Sep 2003 (ph. NAB 58:175, UAM; cover photo). There is just one prior Alaska record, a specimen of *J. t. chinensis* (8 Sep 1945 at Wales; Bailey 1947). This species breeds no closer than the shores of the northwestern Sea of Okhotsk (ABA 2002), possibly to the western Koryak Highlands (www.neisri.magadan.ru/academnet/infocentr/f_f/fauna/ptici/ptici.html).

OLIVE-SIDED FLYCATCHER *Contopus cooperi*. Accidental. One was collected 31 Aug 1989 (UAM 5659; AB 44:143); the only other Bering Sea records are of single birds at Gambell and St. Paul in late spring (J. L. Dunn in litt.). This species nests west only to central Alaska (Gabrielson and Lincoln 1959).

LEAST FLYCATCHER *Empidonax minimus*. Accidental. One on 19 Sep 2001 provided the first record for the Bering Sea (NAB 56:91). This species is a rare visitor and possible breeder in southeastern and east-central Alaska (Gibson and Kessel 1992, Kessel and Gibson 1994).

WESTERN FLYCATCHER *Empidonax difficilis/occidentalis.* Casual visitor. Single Pacific-slope/Cordilleran Flycatchers were found on 26 Aug 1992 (ph. UAM) and 1–2 Sep 2001 (ph. NAB 56:128, UAM). These records are the only two for the Bering Sea region; *E. difficilis* breeds north to southeastern Alaska (Gabrielson and Lincoln 1959).

NORTHERN SHRIKE *Lanius excubitor.* Casual visitor. The only fall record was on 27 Sep 1999. The species breeds on the adjacent Alaska mainland (Kessel 1989); Portenko (1989) cited only one record for the Chukotskiy Peninsula.

WARBLING VIREO *Vireo gilvus.* Casual visitor. Single individuals were present 22 Sep 2002 (ph. UAM), 7 Sep 2004, and 4 Oct 2004. The only other records for the Bering Sea region are of one photographed at Wales 4 Oct 1995 (D. Cunningham in litt.) and one at St. Paul Island 15 Sep 2004 (NAB 59:130). This species breeds north to southeastern Alaska (Kessel and Gibson 1978).

COMMON RAVEN *Corvus corax.* Fairly common to common permanent resident. Counts in August averaged 3–12 per day. Numbers increased during September as birds probably breeding elsewhere on the island congregated around Gambell for the late fall and winter, when the best foraging is found there (e.g., garbage dump, marine mammal carcasses). In late September and early October daily maxima were 10–17, with high counts of 27 on 28 Sep 2002 and 24 on 22 Sep 2003. On several occasions small groups were seen heading northwest from the point toward Siberia, only to turn around after up to a mile at sea. But five birds on 2 Oct 2003 sustained such a heading, at moderate altitude, until they were out of sight, as did eight on 30 Sep 2004.

SKY LARK *Alauda arvensis.* Casual visitor. There are two fall records: 24 Sep 2001 and 28 Sep 2002 (ph. UAM). This species is also casual in spring. It breeds northeast to the Koryak Highlands (Dement'ev and Gladkov 1954, Vaurie 1959).

HORNED LARK *Eremophila alpestris.* Very rare visitor. Northern Palearctic *E. a. flava,* a yellow-faced race that breeds east locally to the central Chukotskiy Peninsula (Portenko 1989), was first recorded at Gambell on 25 Aug 1967 when two were collected from a flock of six (Univ. British Columbia 13356, 13357; Sealy 1968, Sealy et al. 1971). Additional sightings are of one 4–10 Sep 1999, one on 1 Sep 2002 (ph. UAM), a flock of four on 13 Sep 2002 (ph. UAM), and one on 12 Sep 2003. In addition, a Horned Lark not identified to subspecies was seen 24 Aug 1994 (M. Heindel in litt.). There are spring specimens of *E. a. arcticola*, which breeds on the Alaska mainland (Sealy et al. 1971), as well as additional spring sightings of similar white-faced birds.

TREE SWALLOW *Tachycineta bicolor.* Casual visitor. In addition to several late spring and summer records, one was reported on SLI 5 Aug 1960 (Sauer and Urban 1964), a mummified bird was found at Gambell 2 Aug 1968 (Sealy et al. 1971), and up to three individuals were there 18–19 Aug 2004 (ph. UAM). One was near Savoonga during mid-Aug 2004 (L. Sheffield in litt.). This species breeds on the western Alaska mainland (Kessel 1989).

BANK SWALLOW *Riparia riparia.* Casual visitor. One was killed by a boy 11 Aug 1950 (Fay and Cade 1959) and one was seen 22 Aug 1992. A total of 12 birds was found 15–19 Aug 2004 (ph. UAM), including 10 together 16 Aug. Also, two were near Savoonga 19 Aug 2004 (L. Sheffield in litt.). This species occurs almost annually in spring. It breeds on the western Alaska mainland (Kessel 1989).

BARN SWALLOW *Hirundo rustica.* Casual visitor. One white-bellied bird, believed to be Asian *H. r. gutturalis* or *rustica,* which breeds as close as the lower Anadyr River basin (Portenko 1989), was seen 28 Aug 1993 (S. F. Bailey in litt.). Both *gut-*

Figure 8. Juvenile Red-necked Stints have proven to be rare but regular August migrants in the Bering Sea region. This bird was one of three Red-necked Stints at Gambell between 23 and 28 August 2001. Note the pattern of the duller wing coverts and tertials versus the brighter mantle and scapulars.

Photo by Julian R. Hough

turalis and North American *H. r. erythrogaster* have been recorded at Gambell and elsewhere on SLI in late spring and summer (Kessel and Gibson 1978, J. L. Dunn in litt.). A specimen of *erythrogaster* reported to have been found near Gambell 14 Aug 1950 (Fay and Cade 1959) is almost certainly the same bird (UAM 254) salvaged 24 June 1950, according to the specimen label (D. D. Gibson in litt.). That race is very rare anywhere north or west of south-coastal Alaska (Kessel and Gibson 1994).

RED-BREASTED NUTHATCH *Sitta canadensis*. Casual visitor. A juvenile male was collected 28 Sep 1969 (USNM 532682; Sealy et al. 1971), in an irruption year for the species. One was seen 23 Sep 1999; in addition, a local resident reported one about 5 miles from Gambell a few days earlier. In 2004, an irruption year outside Alaska, two birds on 6 Sep (ph. UAM) increased to eight on 7 Sep (ph. UAM), with five still present 9 Sep and one remaining 11 Sep; additional single individuals were seen 13 Sep (ph. UAM) and 15 Sep (ph. UAM). This species breeds north regularly only to south-central Alaska (Kessel and Gibson 1978).

RUBY-CROWNED KINGLET *Regulus calendula*. Rare visitor. Single birds were found 24 Sep (ph. UAM) and 2–3 Oct 1999, three were present 22 Sep 2002 (ph. UAM), one was seen 23 Sep 2003, a total of seven was found between 7 and 19 Sep 2004 (ph UAM), and single birds were seen 30 Sep (ph. UAM) and 2–3 Oct 2004. This species breeds on the western Alaska mainland (Kessel 1989).

MIDDENDORFF'S GRASSHOPPER-WARBLER *Locustella ochotensis*. Casual visitor. Single individuals were photographed 30 Aug 1996 (ph. FN 51:104; Figure 14), 5 Sep 2003 (ph. NAB 58:175, UAM), and 7 Sep 2004 (ph. NAB, UAM). In addition, an unidentified grasshopper-warbler, probably Middendorff's, was present 25–26 Aug 1994 (FN 49:86). This species breeds only as close as southern Kam-

Figure 9. The Sharp-tailed Sandpiper is another Asian shorebird that is a regular fall migrant through the Bering Sea region, sometimes in moderate numbers (e.g., total of 84 at Gambell in 2004), almost all juveniles. It is casual anywhere in Alaska in spring. This juvenile was photographed at Gambell in late August 1998.

Photo by Paul E. Lehman

Figure 10. One of the highlights of the autumn season at Gambell and elsewhere in western Alaska is the opportunity to study birds in juvenal and fresh fall plumages not seen by many North American birders. This Rock Sandpiper (*C. p. tschuktschorum*), which retains much juvenal plumage, was photographed on 26 August 2004.

Photo by Brian L. Sullivan

Figure 11. Several species of large gulls occur at Gambell during the late summer and early autumn. The most abundant is the Glaucous, followed in decreasing numbers by the Herring (subspecies *vegae*), Glaucous-winged, and Slaty-backed. There are also several records of wandering Herring Gulls from the North American mainland (subspecies *smithsonianus*) and one of Thayer's Gull. This mix poses a challenge to the observer, as some plumages of some species are little studied, a fair percentage of the birds are in worn plumage, and hybrids occur regularly. In this photo, taken in late August 1998, from left to right are a juvenile Glaucous, adult Herring (*vegae*), one-year-old Glaucous-winged or hybrid (foreground), fourth-year *vegae*, and juvenile *vegae*.

Photo by Paul E. Lehman

Figure 12. Until the recent disappearance of most ice during that period, a substantial percent of the large Siberian-breeding population of Ross's Gull occurred every year between mid-September and mid-October at Barrow, Alaska. After mid-October, many of these birds are thought to move south through the Bering Strait to winter in the northern and central Bering Sea (Divoky et al. 1988) and perhaps in the Sea of Okhotsk. Residents at Gambell report small numbers on a regular basis in November or December. In 2001, the passage of an arctic front brought four record-early adults to Gambell beginning on 28 September (here one photographed on 1 October).

Photo by Don Cunningham

Figure 13. This Oriental Cuckoo represents one of two fall records at Gambell, where there are two July records as well. This bird, photographed on 23 August 1999, was distinguished from the Common Cuckoo (which has occurred at Gambell multiple times in late spring) by its underwing pattern and strongly buff undertail coverts. Possible distinguishing features include the darker slaty upperparts, primary projection, and bill shape; the width of the barring on the underparts is often *not* a safe distinction between the two species.

Photo by Tony Leukering

chatka and the Sea of Okhotsk (AOU 1998); most of the other Alaska records are likewise from fall (ABA 2002).

LESSER WHITETHROAT *Sylvia curruca*. Accidental. One photographed 8–9 Sep 2002 (ph. Lehman 2003, *Birding* 36:39, UAM) was the first Lesser Whitethroat recorded in North America. This Old World species is not known to breed farther east than the Lena River and just east of Lake Baikal; it winters from India to sub-Saharan Africa (Dement'ev and Gladkov 1954, Vaurie 1959).

WILLOW WARBLER *Phylloscopus trochilus*. Accidental. At least one bird present 25–30 Aug 2002 (ph. Lehman 2003, UAM; Figure 15) established the first record for North America. The sightings on 25 Aug, 26 Aug, and 29–30 Aug came from three separate areas up to 3 km apart, so it is possible that more than one bird was involved. This species breeds as close as the Anadyr River basin and winters in eastern and southern Africa (Dement'ev and Gladkov 1954, Vaurie 1959, Karhu 2004).

DUSKY WARBLER *Phylloscopus fuscatus*. Very rare visitor. One was present 21–24 Aug 1997. A total of four birds was found in 2002: 29–30 Aug, 8–9 Sep (ph. UAM), 8–10 Sep, and 19 Sep. One was seen 14 Sep 2003, and one was present 3–4 Sep 2004 (ph. NAB, UAM). This total constitutes over half of Alaska's fall records of the Dusky Warbler. This species breeds as close as the Anadyr River basin (AOU 1998).

YELLOW-BROWED WARBLER *Phylloscopus inornatus*. Casual visitor. A bird present 23–24 Sep 1999 (ph. Lehman 2000a,c, UAM) established the first record

Figure 14. Middendorff's Grasshopper-Warbler is a member of the skulking genus *Locustella* and breeds no farther north than central Kamchatka, yet there are now one summer and three fall records of this species at Gambell, plus an additional autumn report of an unidentified grasshopper-warbler. There are also records of Middendorff's from Nunivak, St. Paul, Buldir, and Attu islands. This individual was in Gambell's "near boneyard" on 29 August 1996.

Photo by John C. Wilson

for North America; another was found 30 Aug 2002 (ph. NAB 57:104, UAM). This Siberian species nests as close as the western Anadyr River basin (Dement'ev and Gladkov 1954, Vaurie 1959).

ARCTIC WARBLER *Phylloscopus borealis*. Uncommon to fairly common migrant. This species is one of the trans-Beringian passerines that migrate from the Alaska part of their breeding range back to the Old World for the winter (to southeast Asia). During my study it was present almost daily in small to moderate numbers from mid-August through early September, with high counts of 29 birds on both 23 Aug 2002 and 27 Aug 2003. Seasonal totals ranged from only three birds in 2000 and 14 in 2001 to 74 in 2002, 72 in 2003, and 70 in 2004. Fay and Cade (1959) noted this species at Gambell 8 Aug 1953. The latest records are of eight birds 15 Sep 2002, with one remaining 16 Sep, and one 15–16 Sep 2003. Presumably, almost all Arctic Warblers at Gambell are Alaska-breeding *P. b. kennicotti* (see UAM specimens), but nominate *borealis*, which breeds east to the interior of the Chukotskiy Peninsula (Portenko 1989; called *hylebata*), should occur at least casually as well. Winker et al. (2002) reported a specimen (UAM) of the nominate subspecies collected 11 Jul 1985 on St. Matthew Island. The Asian race *P. b. xanthodryas* nests north to Kamchatka; in Alaska it has been recorded to date only in the Aleutians (Gibson and Kessel 1997). Although the Arctic Warbler is not known to breed on SLI, Fay and Cade (1959) mentioned a 1 Jul 1953 sighting at Gambell of a bird entering a small hole beneath some rocks and so thought possibly to be nesting.

Figure 15. This Willow Warbler was at Gambell from 25 to 30 August 2002 (photographed here on 26 August) and was the first recorded in North America. Note the plain slightly greenish upperparts, pale supercilium, pale yellow wash to the sides of the throat and upper breast, and the long primary extension almost equal to the length of the tertials. The fall of 2002 at Gambell produced an amazing three first records for North America, the others being of the Lesser Whitethroat and Spotted Flycatcher.

Photo by George L. Armistead

RED-BREASTED FLYCATCHER *Ficedula parva*. Casual visitor. One on 19 Sep 2004 (ph. UAM) established the first fall record for Alaska. This species has been recorded at Gambell once in spring (King et al. 1978). It nests northeast to the western Anadyr River basin (ABA 2002).

SPOTTED FLYCATCHER *Muscicapa striata*. Accidental. One on 14 Sep 2002 (ph. Lehman 2003, UAM) established the first North American record. This Old World species breeds no closer than Lake Baikal and winters in central and southern Africa (Dement'ev and Gladkov 1954, Vaurie 1959).

SIBERIAN RUBYTHROAT *Luscinia calliope*. Casual visitor. A male 24 Sep 2001 established the northernmost of the few fall records for the Bering Sea (NAB 56:91). This species breeds northeast to the northern Anadyr River basin (AOU 1998). It is more regular, though not annual, as a visitor to Gambell in spring.

BLUETHROAT *Luscinia svecica*. Uncommon migrant. During my study this trans-Beringian passerine occurred regularly in small, rarely moderate, numbers between mid-August and early September. Single-day maxima were of 19 on 25 Aug 1997 and 14 on 28 Aug 1998. Seasonal totals ranged from highs of 21 in 1997 and 28 in 1998 to lows of three in 2000 and five in 2002. The latest record is for 13 Sep (1999).

NORTHERN WHEATEAR *Oenanthe oenanthe*. Rare breeder and fairly common migrant from mid-August to the beginning of September. Single-day maxima were

65 on 25 Aug 1997 and 45 on 27 Aug 1998. Seasonal totals ranged from 26 in 2000 to 122 in 1998, although no other high exceeded 57. The latest record was 17 Sep (2002). Fay and Cade (1959) noted one to six seen daily at Gambell during the second and third weeks of August 1953 and in July and September 1956. Sealy et al. (1971:327) described the wheatear in August 1958 and 1968 as being unusually abundant and seen "about as often as the very common Snow Bunting." There are a few breeding records for SLI, including at Gambell (Kessel and Gibson 1978).

[STONECHAT *Saxicola torquatus*. There is an undocumented report of one bird seen briefly 8 Sep 1992 (AB 47:135). There are approximately five spring records at Gambell (J. L. Dunn in litt.). Alaska records refer to the subspecies *stejnegeri* (Gibson and Kessel 1997) or at least to the *maura* subspecies-group, the Siberian Stonechat (ABA 2002).]

GRAY-CHEEKED THRUSH *Catharus minimus*. Uncommon migrant. This trans-Beringian species breeds west to the Chukotskiy Peninsula (Portenko 1989, Karhu 2004), with this population returning to the Americas for the winter (Kessel and Gibson 1978). During my study it occurred in small numbers every year between late August and mid-September. Most seasonal totals ranged from 3 to 15, with a high of 28 tallied in 2003; the single-day maxima were eight on 29 Aug and seven on 6 Sep 2003. The latest date was 18 Sep (2001). An earlier bird was at Savoonga 16 Aug 2004 (L. Sheffield in litt.).

SWAINSON'S THRUSH *Catharus ustulatus*. Casual visitor. In 2004, four birds were found on 7 Sep (ph. NAB, UAM), with one remaining on 10 Sep; another was present 8 Sep (ph. UAM), and two were seen 18 Sep. These birds, and one on St. Paul Island during the same period—10–11 Sep 2004 (NAB 59:132)—are the first recorded in fall around the Bering Sea. There are two spring records at Gambell (J. L. Dunn in litt.). This species breeds northwest to central Alaska (Gabrielson and Lincoln 1959) and is very rare or casual on the Seward Peninsula (Kessel 1989).

HERMIT THRUSH *Catharus guttatus*. Very rare visitor. Eight individuals were recorded: 30 Aug 1993, 13–15 Sep 2001 (ph. UAM), 16 Sep 2003 (ph. UAM), up to two 6–12 Sep 2004 (ph. UAM), and 15 Sep, 27 Sep, and 3 Oct 2004. There are some 15 or more spring records, making the Hermit Thrush one of the more regular vagrants from the mainland at that season (J. L. Dunn in litt.). It nests north to central Alaska but only rarely close to the western coast (Kessel 1989).

EYEBROWED THRUSH *Turdus obscurus*. Casual visitor. One individual was seen on 25 Sep 2004. This species is predominantly a spring vagrant to western Alaska, with only a few previous fall records for the state. It nests northeast to Kamchatka (AOU 1998).

AMERICAN ROBIN *Turdus migratorius*. Casual visitor. Five fall records of single birds: 21 Aug 1967 (Sealy et al. 1971), 30–31 Aug and 5–6 Sep (ph. UAM) 1998, and 18 Sep (ph. UAM) and 3 Oct 2004. This species breeds on the adjacent Alaska mainland (Kessel 1989).

SIBERIAN ACCENTOR *Prunella montanella*. Very rare visitor. One was found at Kangee Camp, north-central SLI, 13 Oct 1936 (Murie 1938). Since 1999 there have been seven records involving eight individuals at Gambell: 2 Oct 1999, 21–26 Sep 2001 (ph. NAB 56:128, UAM; Figure 16), 29–31 Aug 2002 (ph. UAM; early), 8–9 Sep 2002 (ph. NAB 57:144, not "8–9 Dec," UAM), 1 Oct 2002 (ph. UAM), at least one 3–22 Sep 2003 (ph. UAM), and two others 15 Sep 2003 (ph. UAM), one of which remained through 22 Sep. Most Alaska records of the Siberian Accentor are from fall on the Bering Sea islands. This species breeds northeast to the Anadyr River basin (Portenko 1989).

EASTERN YELLOW WAGTAIL *Motacilla tschutschensis*. Fairly common migrant. This trans-Beringian passerine likely occurs in peak numbers between early and late August. Sealy et al. (1971) reported several large flocks, some containing at least 200 birds, during August 1966 and August 1967, with smaller flocks in mid-August 1969. One was near Savoonga 31 Jul 2003 (L. Sheffield in litt.). On St. Matthew Island, migrants have been noted as early as 5 Aug, with maximum counts in mid-August (Winker et al. 2002). Recent seasonal totals at Gambell range from a low of 22 in 2000 to a high of 150 in 1992. With coverage in 2004 commencing in mid-August, however, the season's total was 220, including 130 on 17 Aug. The species was uncommon by mid-September, and the late date was 19 Sep (1999 and 2003). A full albino was photographed 18–20 Aug 2004 (ph. UAM). The Eastern Yellow Wagtail breeds in western Alaska (Kessel 1989) and is probably a rare breeder on SLI (Sealy et al. 1971). There are no fall records of the Kamchatka subspecies *simillima,* which has occurred a few times in late spring and summer (Sealy et al. 1971).

WHITE WAGTAIL *Motacilla alba*. Uncommon to fairly common breeder. The species was first confirmed nesting at Gambell in 1953 (Fay and Cade 1959), and the subspecies *M. a. ocularis* was a regular breeder and migrant through 1999, and again in 2003 and 2004. Johnson (1976) counted nine pairs in 1973. Two birds remained on 11 Sep 1975 (Kessel and Gibson 1978). In 1989 family groups of local breeders totaled >35 birds on 31 Aug, a high count for Alaska (AB 44:143). There were as many as 30 individuals in late August and early September 1992, up to 15 in late August 1993, a total of 14 in late August and early September 1997, and 13 in late August and early September 1998. These birds were also thought to be local breeding adults and their young. In autumn 1999, however, only four birds were seen, and none were seen in 2000, 2001, and 2002, except for a single immature 12–14 Sep 2001 (ph. UAM). In late August and early September 2003, the total of four birds (ph. UAM) included a fledged juvenile accompanying an adult; one individual remained through 15 Sep. In 2004, a total of 14 birds, including six juveniles, was seen between mid-August and early September (ph. UAM); three birds were seen leaving the point toward Siberia on the morning of 27 August, and the last one or two individuals remained through 18 Sep, the latest date.

BLACK-BACKED WAGTAIL *Motacilla lugens*. Casual visitor. A female believed to be a Black-backed Wagtail and accompanied by a fledged juvenile was present from at least 23 Aug to 3 Sep 1998. There are several spring records of the Black-backed Wagtail and two records of single Black-backeds paired with White Wagtails, in May–June 1990 (AB 44:481) and May–June 2004 (J. L. Dunn in litt.). This species does not normally breed northeast of Kamchatka and the Sea of Okhotsk (AOU 1998). Many authors (e.g., Cramp 1988, OSJ 2000, Alström and Mild 2003) have maintained *lugens* as a subspecies of *M. alba* or have recommended lumping it with the White Wagtail; the Alaska Checklist Committee recently relegated *lugens* to the rank of subspecies as well (Gibson et al. 2003).

TREE PIPIT *Anthus trivialis*. Casual visitor. One on 21 and 27 Sep 2002 (ph. *Birding* 35:18, UAM) established the third record for North America. The second record also came from Gambell, 6 Jun 1995 (FN 49:293). This Eurasian species breeds east only as far as the Kolyma River (ABA 2002).

OLIVE-BACKED PIPIT *Anthus hodgsoni*. Casual visitor. One found 5–6 Sep 2000 (ph. UAM) established the first fall record for the Bering Sea north of the Aleutians (NAB 55:90); there are now fall records from the Pribilof Islands as well. There are over six spring records for Gambell. This Eurasian species breeds northeast to the southern Koryak Highlands (Dement'ev and Gladkov 1954, Vaurie 1959).

PECHORA PIPIT *Anthus gustavi*. Casual visitor. A total of three birds was present 9–14 Sep 2003: two on 9 Sep, with one remaining through 14 Sep, and another 10–14 Sep (ph. UAM). These made the first fall records for Alaska (NAB 58:128). Another four birds were found in 2004: one 24 Aug–1 Sep (ph. NAB, UAM, Figure 17A) was joined by a second bird 30 Aug–1 Sep, a third bird was found 4–6 Sep (ph. UAM, Figure 17B), and a fourth was present 19 Sep. This species nests northeast to the Chukotskiy Peninsula (Portenko 1989, AOU 1998, Karhu 2004).

RED-THROATED PIPIT *Anthus cervinus*. Uncommon fall migrant, rare spring migrant, and rare breeder. Birds advertising territories and carrying nesting material have been seen around Gambell, particularly on Sevuokuk Mountain, during multiple years in June (AB 29:1020, Kessel and Gibson 1978). An adult accompanied by up to three juveniles—some begging—were there 15–20 Aug 2004 (ph. UAM). A juvenile female was collected at Gambell 18 Aug 1958 (Sealy et al. 1971). As a fall migrant, the Red-throated Pipit was fairly numerous during some years of my study, such as 1992 (total of 40 seen 22–27 Aug) and 2003 (total of 94), but scarce in other years, such as 2000 (only nine tallied). Daily maxima included 20–28 birds on 23 and 24 Aug 1992, 25 on 31 Aug 1993, 26 on 22 Aug 2003, and 40 on 28 Aug 2003. The latest records were of single individuals remaining through 27 Sep 1999 and 24 Sep 2001. There are only several fall records of adults with orange-red throats; one on 21 Sep 2003 was late for a bird in that plumage.

AMERICAN PIPIT *Anthus rubescens*. Uncommon migrant. Two subspecies are thought to occur at Gambell. *A. r. pacificus* breeds in Alaska and probably in small numbers on SLI (Sealy et al. 1971). During my study migrants apparently of *pacificus* were found between mid-August and mid-September, and most seasonal totals ranged from 11 to 17 individuals, with 31 in 2003. The daily maximum was 25 on 28 Aug 2003. The latest record was 1–4 Oct (2004; up to two birds). Birds look-

Figure 16. With autumn coverage at Gambell lasting for six weeks or more in 1999, 2001, 2002, 2003, and 2004, the Siberian Accentor is proving to be a nearly annual fall visitor, with at least eight island records. As many as three individuals have been found in a season at Gambell, and the first two records for the Pribilof Islands were made in 2003 during St. Paul's first-ever autumn survey. Yet the species is unrecorded in Alaska during spring. This individual was at Gambell 21–26 September 2001 (photographed here on the first day).

Photo by Paul E. Lehman

Figure 17. Pechora Pipits at Gambell (A) 24 August–1 September (here 26 August) 2004 and (B) 4–6 September (here 6 September) 2004. Compared to the Red-throated Pipit, the Pechora shows bolder, sharper crown and back markings, little if any contrast between the nape and crown, warmer tones to the head, bolder white wingbars, a cleaner buff wash to the breast contrasting with a whitish throat and belly, a slightly thicker, fleshier-based bill, a faint dark loral line, and—very important—two or three primary tips visibly extending past the longest tertial. The bird in (B) is particularly warm-toned and boldly marked. This species usually remains silent when flushed or gives a rather sharp, short one- or two-syllabled call, unlike the thin *speee* given regularly by the Red-throated.

Photos by Brian L. Sullivan

ing like the Asian subspecies *A. r. japonicus* were rare; the records were as follows: unknown number seen in late Aug 1993 (S. F. Bailey in litt.); 1 on 4 Sep 1993 (D. Cunningham in litt., ph. UAM); 1 from 29 Sep to 1 Oct 1999; total of 3 from 27 Aug to 10 Sep 2000 (G. Rosenberg in litt.); total of 3 from 1 to 9 Sep 2001; total of 7 from 23 Aug to 17 Sep 2002 (ph. UAM); an exceptional total of 25 from 27 Aug to 18 Sep 2003 (ph. UAM), with a high count of 13 from 30 Aug to 3 Sep, and an additional bird on 28 Sep; and a total of 7 from 28 Aug to 3 Oct 2004. Several birds that appeared intermediate between the two subspecies were seen annually as well. The taxonomy of American Pipits in this region is unsettled. Whereas some authors state that nominate *rubescens* breeds west from North America into northeast Asia (e.g., Vaurie 1959), others treat all northeast Asian populations as belonging to *japonicus* (e.g., Stepanyan 1990). Only *pacificus* breeds in Alaska according to Gibson and Kessel (1997). Further complicating matters, Portenko (1989) used the name *harmsi* (type specimen from Tashkent, Uzbekistan) for breeding populations of the Chukotskiy Peninsula and Anadyr River basin; this name was synonymized with nominate *rubescens* by Vaurie (1959) but with *japonicus* by Hall (1961). Alström and Mild (2003) tentatively restricted breeding *rubescens/pacificus* to North America, but they had no firm opinion.

[BOHEMIAN WAXWING *Bombycilla garrulus*. No records at Gambell, but three birds were found 29 Aug 1961 at Northeast Cape, at the opposite end of SLI (Kessel and Gibson 1978).]

TENNESSEE WARBLER *Vermivora peregrina*. Accidental. One on 22 Sep 2001 (ph. NAB 56:128, UAM) was the first recorded for the Bering Sea and western Alaska. This species is a rare visitor to Alaska, even to the southeast (Kessel and Gibson 1978).

ORANGE-CROWNED WARBLER *Vermivora celata*. Rare visitor. This species was first recorded at Gambell 20 Aug 1999 (ph. NAB 54:91, UAM), yet reports of 18 individuals accumulated from then through 2004. Sixteen of these were identified as the drab subspecies *V. c. celata* (ph. UAM), which breeds on the adjacent Alaska mainland (Kessel 1989), between 16 Aug (2004) and 15 Sep (2004), including three on 8 Sep 2000 (NAB 55:90), four on 7 Sep 2004, and a season-high total of ten birds in 2004. Two birds appeared to be the more brightly colored subspecies *V. c. lutescens* from south-coastal Alaska and points southeast: 19 Sep 2001 and 22 Sep 2002. There are no spring records of this species.

NASHVILLE WARBLER *Vermivora ruficapilla*. Accidental. One photographed 5–7 Sep 2004 (ph. NAB, UAM) established the first documented record for Alaska (there were two previous sight reports from south-coastal Alaska). This species breeds no closer than southern British Columbia and southwestern Alberta (*V. r. ridgwayi*) and central Saskatchewan (*V. r. ruficapilla*) (Sibley 2003).

YELLOW WARBLER *Dendroica petechia*. Very rare visitor. First recorded on 31 Aug 1989 (AB 44:143), by 2004 the species totaled 12 records (ph. UAM) between 18 Aug (2004) and 19 Sep (2002). There are no spring records. It breeds on the adjacent Alaska mainland (Kessel 1989).

MAGNOLIA WARBLER *Dendroica magnolia*. Accidental. One found 21 Sep 2002 provided the third record for the Bering Sea and the first for SLI (NAB 57:104). This species is a rare but almost annual early-summer visitor to southeastern Alaska (Kessel and Gibson 1978).

YELLOW-RUMPED WARBLER *Dendroica coronata*. Casual visitor. The four found in fall were all Myrtle Warblers (*D. c. hooveri*): 26 Aug and 17 Sep (ph. UAM) 2001, 22 Sep 2002 (ph. UAM), and 3 Oct 2004. There are also several spring records. This species breeds west to western Alaska (Kessel 1989).

TOWNSEND'S WARBLER *Dendroica townsendi*. Casual visitor. One was seen 14 Sep 2004, another 25–28 Sep 2004 (ph. UAM). There is also one spring record (NAB 58:420, ph. UAM). This species breeds north to south-coastal and west to east-central Alaska (Gabrielson and Lincoln 1959).

BLACKPOLL WARBLER *Dendroica striata*. Casual visitor. There is one record: 26 Aug 1992 (ph. UAM). This species breeds in western Alaska (Kessel 1989).

AMERICAN REDSTART *Setophaga ruticilla*. Accidental. One present 18–19 Sep 2004 (ph. NAB, UAM) was the first recorded in the Bering Sea region. This species breeds north only to southeastern Alaska (Gabrielson and Lincoln 1959).

NORTHERN WATERTHRUSH *Seiurus noveboracensis*. Casual visitor. Individuals were seen 15 Aug and 19 Aug 2004 (ph. UAM). There are only three other records for islands in the Bering Sea: two from Gambell in spring (Kessel and Gibson 1978, J. L. Dunn in litt.) and one from St. Paul Island in fall (NAB 59:132). This species breeds on the adjacent Alaska mainland (Kessel 1989).

MACGILLIVRAY'S WARBLER *Oporornis tolmiei*. Accidental. One found 26 Sep 2002 (ph. UAM) was presumably the same bird seen also 29 Sep, the first recorded for the Bering Sea region (NAB 57:104). The species breeds north only to southeastern Alaska (Gabrielson and Lincoln 1959).

WILSON'S WARBLER *Wilsonia pusilla*. Rare visitor. First recorded on SLI in 1935, with a specimen collected (UAM 2903, *W. p. pileolata*) east of Savoonga 6 Sep and three additional birds seen there during the previous week (Murie 1936). Sealy et al. (1971) cited four birds at Gambell 28–31 Aug 1966 and one on 30 Aug 1967. From 1994 through 2004, 18 (ph. UAM) were found between 18 Aug (2004) and 22 Sep (2003), with a high count of six on 19 Aug 2004. There are probably no spring records (J. L. Dunn in litt.). This species breeds on the adjacent Alaska mainland (Kessel 1989).

AMERICAN TREE SPARROW *Spizella arborea*. Very rare visitor. A total of six birds: single individuals 31 Aug 1966 (Sealy 1967), 21–22 Sep 1999, and 29 Aug–1 Sep 2000 (ph. UAM), and up to three from 7 to 9 Sep 2004 (ph. UAM). This species also is very rare in spring. It breeds on the nearby Alaska mainland (Kessel 1989).

CHIPPING SPARROW *Spizella passerina*. Very rare visitor. Gambell has a surprising eight fall records of this species, which breeds no closer than east-central and southeastern Alaska (Kessel and Gibson 1978): 30–31 Aug 1998 (ph. UAM), 19–21 and 29 Sep 1999, 14 and 29 Sep (ph. UAM) 2002, 16–19 Sep (ph. UAM) and 3 Oct 2003, and 3 Oct 2004. All birds were juveniles. The only other Bering Sea records are of one in spring at Gambell (Fay and Cade 1959) and one in fall on St. Paul Island (NAB 59:132).

CLAY-COLORED SPARROW *Spizella pallida*. Accidental. One on 20 Sep 2003 (ph. UAM) established the first record for western Alaska and only the fifth for the entire state (NAB 58:128). This species breeds no closer than northeastern British Columbia and extreme southwestern Northwest Territories (Sibley 2003).

SAVANNAH SPARROW *Passerculus sandwichensis*. Rare to uncommon visitor. This species was probably the most regular fall (and spring) vagrant from the adjacent Alaska mainland. From 1994 through 2003 one to nine birds were found annually between late August and late September. In 2004, coverage beginning in mid-August produced a surprising 20–42 birds daily from 16 to 20 Aug (peak count on 17 Aug); the season total was 64 birds through 17 Sep (with 17 more around Savoonga 21–27 Aug; NAB 59:132). An earlier bird was seen at Gambell 1 Aug 1966 (Sealy 1967). Single late birds occurred 8–10 Oct 2001 (D. Cunningham in litt., ph. UAM) and 3 Oct 2003.

FOX SPARROW *Passerella iliaca*. Rare visitor. Surprisingly, there are more records at Gambell of the Sooty Fox Sparrow (*unalaschcensis* subspecies group), which breeds no closer than the Alaska Peninsula and south-coastal Alaska (Gibson and Kessel 1997), than of the red Yukon Fox Sparrow (*P. i. zaboria*), which breeds on the adjacent Alaska mainland (Kessel 1989). Fall reports of the Sooty totaled 11 as follows: up to two 29–30 Aug 1993, and then nine individuals (ph. UAM) 1997–2004 between 18 Aug (2004) and 29 Sep (2002). The seven of the red subspecies were found 16 Sep 1999 (ph. UAM), 22–25 Sep 2001 (ph. UAM), 5–11 Sep 2004 (up to three; ph. UAM; Figure 18), 20 Sep 2004, and 3 Oct 2004. In addition, single intermediate birds were photographed 25 Sep 2002 (ph. UAM) and 22 Sep 2003 (ph. UAM). This species is casual in spring, with all records at that season involving Sooty Fox Sparrows (J. L. Dunn in litt.).

LINCOLN'S SPARROW *Melospiza lincolnii*. Casual visitor. Three fall records: 26 Sep 2001 (ph. UAM), 9–11 Sep 2003 (ph. UAM), and 19 Sep 2003. This species also is casual in spring. It breeds northwest to central Alaska (Gabrielson and Lincoln 1959).

WHITE-CROWNED SPARROW *Zonotrichia leucophrys*. Rare visitor. This species

Figure 18. During the autumn—particularly between mid-August and the beginning of October—a substantial number of landbirds from mainland Alaska wander offshore to the Bering Sea islands, more so than in spring. One such wanderer was this Fox Sparrow, subspecies *zaboria*, photographed at Gambell on 6 September 2004. This subspecies nests on the adjacent Seward Peninsula, and there are seven fall records of this form at Gambell. Surprisingly, there are more sightings of Sooty Fox Sparrows (*unalaschcensis* subspecies group), although these birds nest much farther to the south, only as close as the Alaska Peninsula and south-coastal Alaska.

Photo by Brian L. Sullivan

Figure 19. Like the Siberian Accentor, the Little Bunting is proving to be an annual or near-annual fall visitor at Gambell, with ten records there since 1993, but no spring records. There are also two fall records for coastal California. This individual was present from 26 to 29 August 1996, photographed here on its first day.

Photo by John C. Wilson

occurred in fall annually in numbers ranging from one to seven individuals per year, except for 19 in 2004, when the high count per day was eight on both 7 and 9 Sep. The earliest record is of one collected 15 Aug (1961; Sealy et al. 1971); the latest is 3 Oct (2004; two birds). All birds have been immatures except for one adult 12 Sep 2001. Three specimens collected in late August and early September 1966 and 1968 were *Z. l. gambelii* (Sealy et al. 1971), a common breeder on the adjacent Alaska mainland (Kessel 1989); all Gambell records apparently involve this subspecies. In spring the White-crowned Sparrow is only casual on SLI.

GOLDEN-CROWNED SPARROW *Zonotrichia atricapilla*. Rare visitor. Twenty-three birds, all immatures, have been found in autumn, all since 1993 (ph. UAM). The records fall between 29 Aug (1993 and 2000) and 3 Oct (2004; four birds), including a high count of seven birds on 9 Sep 2004 and a total of 14 for that season. An early bird was at Savoonga on 24 Aug 2004 (L. Sheffield in litt., ph. UAM). This species is casual in spring. It is a common breeder on the adjacent Alaska mainland (Kessel 1989).

DARK-EYED JUNCO *Junco hyemalis*. Casual visitor. The fall records are all of Slate-colored Juncos (subspecies nominate *hyemalis*): 10 Sep 1966 (Sealy et al. 1971) and 7–11 Sep 2004 (total of three; ph. UAM). In addition, Fay and Cade (1959) saw one at Savoonga 28 Nov 1954, and single individuals were there in late Sep and mid-Oct 1980 (AB 35:215). This species is very rare or casual in spring. It breeds west to western Alaska (Kessel 1989).

LAPLAND LONGSPUR *Calcarius lapponicus*. Common breeder and migrant. This species is the most numerous passerine on SLI (Fay and Cade 1959). Daily counts between mid-August and early September typically averaged 100–300 birds, with an

Figure 20. Both Common and Hoary Redpolls are found on St. Lawrence Island in late summer and fall, although their numbers vary from year to year. Only the Hoary has been documented in late fall and winter and as nesting on the island, including one nest at Gambell that was still active in late August 2004. Juvenile birds, such as this one, may be very difficult to identify in the field, as some young birds watched begging from adult Hoaries showed an apparent bill size and shape normally associated with the Common Redpoll. This juvenile Hoary, photographed on 30 August 2004, shows a bill typical of its species.

Photo by Brian L. Sullivan

increase in early September as migrants congregated around Gambell. High counts reached 400–500. During the first half of September small-to-medium-sized flocks were seen leaving the island toward Siberia, particularly in the early morning during fair weather and light winds. The species was uncommon in late September, with the last birds noted through 29 Sep (1999 and 2002) and on 3 Oct (2003).

LITTLE BUNTING *Emberiza pusilla*. Very rare visitor. Between 1993 and 2004, ten Little Buntings were found at Gambell, constituting over half the records for North America: 4 Sep 1993 (ABA 2002, ph. UAM); 26–29 Aug 1996 (FN 51:104; Figure 19); 24 Sep 1999; 19–24 Sep 2001; 10–11 Sep and 30 Sep–2 Oct (ph. NAB 57:104, UAM) 2002; 25 Aug, 27 Aug, and 2–4 Sep (ph. UAM) 2003; and 7 Sep 2004 (ph. UAM). This species breeds northeast to the northern Anadyr River basin (AOU 1998).

REED BUNTING *Emberiza schoeniclus*. Accidental. One photographed 28–30 Aug 2002 (ph. NAB 57:144) established the first record north of the Aleutians and the first fall record for Alaska (NAB 57:104). This species breeds northeast only to Kamchatka (AOU 1998).

SNOW BUNTING *Plectrophenax nivalis*. Common breeder and migrant. This is the second most numerous passerine on SLI (Fay and Cade 1959). Daily counts from mid-August through mid-September averaged 100–250 individuals, with some counts reaching 600; up to 1000–1400 were seen daily 2–5 Sep 2004. Like Lapland

Longspurs, Snow Buntings accumulated around Gambell during September, and flocks departed the island toward Siberia. By late September, maximum counts were usually of <20 birds and the species was seen only sporadically. In 2002 and 2003, only two to four birds remained irregularly late in September, but then migrant flocks of 20 to 30, containing McKay's Buntings (see below), occurred 30 Sep–1 Oct 2002, 3 Oct 2003, and 30 Sep–4 Oct 2004. Two birds remained on 1 Nov 2004 (H. Irrigoo pers. comm.). Fay and Cade (1959) stated that small numbers might overwinter on SLI; the species is rare in winter on the Seward Peninsula (Kessel 1989).

McKAY'S BUNTING *Plectrophenax hyperboreus*. Rare migrant. Exact status uncertain because of possible hybrids with the Snow Bunting. Single birds were seen 23 Aug 1992, 7–9 Sep 1992 (D. Sonneborn in litt.), and 21–27 Aug 1994 (M. Heindel in litt.), up to two were present 8–12 Sep 2000 (G. Rosenberg in litt.), and one was photographed 22 Sep 2001 (ph. NAB 56:128, UAM), as was one on 30 Aug 2002 (ph. UAM). Late flocks of newly arrived Snow Buntings contained seven McKay's both 30 Sep–1 Oct 2002 (ph. UAM) and 3 Oct 2003. In 2004, an early McKay's was seen 30 Aug (P. W. Sykes pers. comm.), and three were with Snow Buntings on 30 Sep followed by an exceptional 55 McKay's on 1 Oct (one of the largest counts ever away from St. Matthew and Hall islands). Fifteen remained 2–4 Oct, five on 14 Oct (H. Irrigoo pers. comm.). Local residents reported that small-to-medium numbers may linger during October in beach grass south of the village. This species occurs at Gambell annually in small numbers in spring; it is at best a very rare and irregular breeder on SLI as well. It winters along the mainland coast from Kotzebue Sound south to the Alaska Peninsula (Kessel and Gibson 1978).

RUSTY BLACKBIRD *Euphagus carolinus*. Casual visitor. One was photographed 13 Sep 2004 (ph. UAM). In addition, a bird was collected on the Putgut Plateau, west-central SLI, 25 Oct 1960 (Sealy et al. 1971). There is a spring specimen from Gambell (UAM 2927; Kessel and Gibson 1978). This species breeds in western Alaska (Kessel 1989).

BROWN-HEADED COWBIRD *Molothrus ater*. Casual visitor. Single juveniles were photographed 6–7 Sep 1998 (ph. NAB 53:91, UAM) and 21–22 Aug, 30–31 Aug (ph. NAB), and 6–7 Sep 2004 (all ph. UAM), providing the only records for Bering Sea islands. This species is a rare but regular visitor north to Alaska (Kessel and Gibson 1978).

BULLOCK'S ORIOLE *Icterus bullockii*. Accidental. One in female plumage 3 Oct 2004 was approximately the fifth Bullock's Oriole reported in Alaska, but in the absence of a specimen or recognizable photo the species remains on the state's list of "unsubstantiated" taxa. It breeds north to southern British Columbia (Sibley 2003).

BRAMBLING *Fringilla montifringilla*. Very rare visitor. Fall records were as follows: up to three from 2 to 8 Sep 1998 (not "6–7 Sep"—NAB 53:91; ph. UAM), up to two from 8 to 13 Sep 2000 (NAB 55:91), total of four between 17 and 26 Sep 2001 (ph. UAM), and one from 9 to 16 Sep 2003 (ph. UAM). The first were the earliest recorded in Alaska in fall. This species occurs almost annually in spring. It breeds northeast to the western Anadyr River basin (AOU 1998).

COMMON ROSEFINCH *Carpodacus erythrinus*. Casual visitor. Three fall records, all of single birds: 27–29 Aug 1996 (FN 51:104, ph. UAM), 10 Sep 2000 (NAB 55:91, ph. UAM), and 1–2 Sep 2003 (ph. NAB 58:128, UAM). There are several spring records, one of a flock of up to 18 birds (Kessel and Gibson 1978). This species breeds northeast to the Koryak Highlands (Dement'ev and Gladkov 1954, Vaurie 1959).

PURPLE FINCH *Carpodacus purpureus*. Accidental. One female/immature male was photographed 7–9 Sep 2004 (ph. NAB, UAM). A specimen of the nominate

subspecies, which breeds north to northern British Columbia and southern Yukon (Sibley 2003), was collected at Savoonga 5 Jun 1984 (UAM 5559; Gibson and Kessel 1992) and is the only other record for the Bering Sea. The Purple Finch is casual anywhere in Alaska (Kessel and Gibson 1978).

RED CROSSBILL *Loxia curvirostra*. Casual visitor. Two birds collected near Gambell on 15 Aug 1961 were identified as *L. c. sitkensis* (= *minor*), and from 26 to 29 Jul 1962 eight specimens were obtained and three additional birds were seen (Sealy et al. 1971). In 2003, an irruption year, this species appeared at Gambell beginning on 2 Jul, with up to 30 birds found later in the month (NAB 57:533) and up to three remaining 21–29 Aug (ph. UAM). In addition, two were near Savoonga 24 Aug 2003 (L. Sheffield in litt.). This species is found regularly no closer than south-coastal and possibly southwestern Alaska, although it has a history of wandering to the Bering Sea islands (Kessel and Gibson 1978).

[WHITE-WINGED CROSSBILL *Loxia leucoptera*. Casual visitor. A bird collected near Gambell 26 Jul 1962 was assigned to the nominate race from North America; another was seen 29 Jul 1962 (Sealy et al. 1971). This species breeds through central Alaska (Gabrielson and Lincoln 1959).]

COMMON REDPOLL *Carduelis flammea*. Uncommon to fairly common visitor, though irregular. During my study this species was generally outnumbered by the Hoary Redpoll, particularly after early September. Some years very few or no birds occurred; in other years daily counts reached up to 25. Six birds were present at my arrival on 14 Aug 2004. The highest counts were in 2003: up to 40 from 9 to 20 Sep and up to 65 from 25 to 27 Sep. The latest record was of 25 on 7 Oct (2003). Sealy et al. (1971) stated that there were no definite breeding records for the island. Portenko (1989) noted that the Common Redpoll does not breed on the Chukotskiy Peninsula. Some redpolls at Gambell are difficult to identify to species, including many juveniles and some apparently intermediate adults.

HOARY REDPOLL *Carduelis hornemanni*. Uncommon to fairly common, though irregular, visitor and rare breeder. Sealy et al. (1971) cited two nest records at Gambell in June 1967. A nest in the village during 2004 did not fledge its three young until 26 Aug (ph. UAM). This species was more numerous than the Common Redpoll beginning in mid-September. Some years very few or no birds occurred, whereas in others there were flocks of up to 20–40. Small to moderate numbers remained through early October (e.g., 22 on 7 Oct 2003); later records include one collected at Gambell 16 Oct 1930 (Friedmann 1932) and four birds collected at an unknown locality on SLI 3 Nov 1959 (Sealy et al. 1971). Local residents have reported redpolls into the winter, e.g., two birds remained through Feb 2003 (H. Irrigoo pers. comm.). Some redpolls at Gambell are difficult to identify to species, including many juveniles (Figure 20) and some adults.

PINE SISKIN *Carduelis pinus*. Casual visitor. A mid-summer or early fall wanderer at Gambell 19–26 Jul 1964 was an example of nominate *pinus* (Sealy et al. 1971). In autumn 1999, when this species—a regular breeder north only to south-coastal, very rarely central, Alaska (Kessel and Gibson 1978)—irrupted north into central Alaska, a total of four birds wandered to Gambell: one on 24 Aug, one on 3 Sep (ph. UAM), and up to two from 9 to 18 Sep. A single bird was seen 26 Sep 2001(NAB 56:92, ph. UAM). In 2003, another irruption year, up to three were present 21 Aug–12 Sep (ph. UAM), up to five were seen 22–23 Sep (ph. UAM), and one was found 2–4 Oct (ph. UAM).

[AMERICAN GOLDFINCH *Carduelis tristis*. A report of three birds near Gambell 10 Aug 1964 (Sealy et al. 1971) was probably in error. This species is casual in Alaska, with a few records of single birds in the southeastern and south-coastal parts of the state (e.g., see Gibson and Kessel 1992).]

THE FALL MIGRATION

Fall migration at Gambell, and in most of western Alaska, has received less attention than has spring migration. A likely reason is that fall migration is more protracted than the shorter, more concentrated "pulse" in spring. In spring, the "window" of passage is narrow; birds must not arrive on the arctic breeding grounds so early that conditions are still too cold and frozen, or so late that the best breeding sites are all taken or their broods would fledge too late. In spring the peak seasons for waterfowl, shorebirds, and passerines overlap substantially. But the peak of southbound shorebirds (between July and early September) is largely over before most vagrant passerines occur (late August through early October). Another factor is the increased difficulty in finding migrants and vagrants at low density in the relatively lush vegetation of early fall. In spring, there is only sparse cover provided by dead plants, and remaining snow further concentrates migrants in those open patches already thawed. In the Bering Sea region, Gambell's recent, regular, and extensive autumn coverage did not begin until the 1990s; St. Paul Island in the Pribilofs received its first detailed fall surveys only in 2003 and 2004; and St. George and St. Matthew islands have yet to be censused extensively at this season in any year.

Recent autumn coverage at Gambell has not begun in earnest earlier than 20 August, except in 2004, when it commenced on 14 August. Thus the early fall migration period is still poorly known. July and August are the peak period for southbound shorebirds; most adults have departed by early August. A number of species poorly represented in the existing data are probably regular migrants during this period. Several shorebirds that have occurred multiple times in spring, some almost annually, are unrecorded or represented by only a single record in fall. These include the Eurasian Dotterel, Common Greenshank (*Tringa nebularia*), Wood Sandpiper, Common Sandpiper (*Actitis hypoleucos*), Great Knot, Temminck's Stint, Least Sandpiper, and Ruff. This difference is probably the result of the combination of the poor coverage of the island from July to mid-August and the overall lower numbers of several of these species in western Alaska in fall versus spring. Several other shorebirds, however, including the American Golden-Plover, Gray-tailed Tattler, and, especially, Sharp-tailed Sandpiper, occur more regularly in autumn than in spring. Among landbirds, a substantial percentage of the early trans-Beringian passerines, including the Arctic Warbler, Northern Wheatear, and, especially, Eastern Yellow Wagtail, are missed by observers arriving in late August. There also has been no recent autumn coverage after early October. As a result, accurate departure dates for a substantial number of species, particularly waterbirds, are not known, the late-autumn seabird migration remains poorly studied, and late-fall lingering and vagrant passerines remain largely undiscovered.

Autumn seawatching from the point (Figure 2) has lasted anywhere from 1 to 5 hours most days, with the average being 2 hours every morning beginning soon after dawn, when the best variety of species tends to occur. Another hour or more is often spent at some time later in the day (usually in the evening early in the fall, when peak numbers of auklets occur). As a result, the seabird data I report are based on incomplete, uneven coverage.

A full-time seawatch at this season would result in higher, more accurate totals.

The second half of August and the beginning of September are characterized by the continued presence of large numbers of nesting alcids, a good number and variety of shorebirds, peak numbers of most trans-Beringian passerines, and a variety of eiders and migrant jaegers. The early-autumn flight of Emperor Geese is most likely to take place very late in August. From one to a few strays from Asia and the North American mainland are typically found at this time (with exceptional numbers of the latter tallied in 2004). By the end of the first week of September, the smaller alcids have mostly finished breeding and have departed or moved offshore, most of the smaller shorebirds are gone, many of the trans-Beringian passerines (other than pipits) have passed, and Lapland Longspurs and Snow Buntings are staging in preparation for their flight northwest to Siberia. The immense numbers of Short-tailed Shearwaters just offshore may reach peak abundance. Records of vagrant landbirds from both Asia and North America increase. Shorebird diversity declines further in mid-September, but several seabirds, such as the Spectacled Eider, Yellow-billed Loon, and Black Guillemot, are now more likely to be seen. By late September, passerine diversity declines to just a handful of regular species—the Common Raven, Lapland Longspur (a few), Snow Bunting, and redpolls—but a late-lingering species or vagrant or two joins the list on a regular basis.

Most of the Old World vagrant passerines found at Gambell breed no farther to the northeast than Russia's Anadyr River basin (also referred to as "Anadyrland") or Koryak Highlands, located about 800 km west and >950 km southwest of St. Lawrence Island, respectively (Figure 1). Very few of these species breed as far north as the Chukotskiy (also written as Chukotsk, Chukchi, or Chukotski) Peninsula, where several species of Asian waterbirds that have occurred at Gambell do undoubtedly originate. Several vagrants have originated from populations even much farther away, such as the Lesser Whitethroat and Spotted Flycatcher in September 2002, which nest no closer than the Lena River and Lake Baikal regions, respectively, some 3500 and 4200 km distant. Some North American strays at Gambell must have originated from at least as far away as British Columbia, Alberta, or Saskatchewan (e.g., Nashville Warbler, Clay-colored Sparrow, and Bullock's Oriole).

The number and variety of migrant shorebirds and landbirds present at Gambell, as well as the numbers of seabirds visible off the point, are highly dependent on weather. Local weather data covering wind speed and direction, temperature, and cloud cover were collected by myself and others on a daily basis during visits between 1999 and 2004. Low overcast and rain tend to ground shorebirds and trans-Beringian migrants. Rain falling in the late-night and early-morning hours appears to be associated with good counts of landbirds and the appearance of vagrants. North and northeast winds often produce the largest numbers of seabirds close to shore. But those same winds tend to suppress the occurrence of most Asian strays, unless these winds are associated with a storm and accompanied by rain. My visit during the autumn of 1999 saw 29 of 45 days characterized by north and northeast winds, and only four Asian landbirds were found: an Oriental Cuckoo, a Siberian

Accentor, a Little Bunting, and a Yellow-browed Warbler, the first recorded in North America. In contrast, westerly to southerly winds dominated on 21 of 42 days in the fall of 2002, and that year produced an exceptional number and variety of stray Asian landbirds, including three first records for North America—of the Lesser Whitethroat, Willow Warbler, and Spotted Flycatcher—as well as an Oriental Cuckoo, a Sky Lark, four Dusky Warblers, a Yellow-browed Warbler, three Siberian Accentors, a Tree Pipit, a Reed Bunting, and two Little Buntings. These same winds probably also played a role, however, in a below-average season for seabirds and shorebirds. Winds from between the south and northeast are likely favorable for many strays from the North American mainland; for example, several multi-day periods characterized by such winds during autumn 2004 were associated with multiple, substantial fallouts of these species. But some rarities turn up in just about any weather: a number of Asian birds have been found on days with light easterly winds or following storms with stronger northeasterly winds and rain, and some North American strays have turned up on days with westerly or northerly winds. Sometimes overcast conditions with light and variable winds—including southerlies and southwesterlies—have produced few migrants or vagrants. There are, of course, factors other than the weather at work that shape a given year's migration. These include the timing and success of the nesting season, which can vary greatly from year to year in the Arctic, and such intangibles as chance and observer luck.

Fall birding in much of coastal Alaska is a pioneering effort, with still much to be learned. An extended autumn trip provides the potential for the thrill of discovery. The composition of rarities in fall is different from that in spring. For example, such landbirds as Middendorff's Grasshopper-Warbler, Dusky Warbler, Yellow-browed Warbler, Siberian Accentor, and Little Bunting are more likely to occur in Alaska during the fall than in spring. A substantially greater number of mainland North American breeding species wanders west or northwest out to the offshore islands in autumn than in spring. Also, a good understanding of the sizable fall seabird movements through the Bering Sea is still in its fledgling stage. Autumn visits to western Alaska also provide the opportunity to study and photograph a number of species in juvenal and fresh fall plumages not normally seen by many North American observers.

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NOTES

BREEDING VERMILION FLYCATCHERS IN CISMONTANE SAN BERNARDINO COUNTY, CALIFORNIA

THOMAS A. BENSON, Department of Biology, California State University, 5500 University Parkway, San Bernardino, California 92407; thomasabenson@aol.com

During the 2003 and 2004 breeding seasons I observed a pair of Vermilion Flycatchers (*Pyrocephalus rubinus*) make several nesting attempts on the campus of California State University San Bernardino (CSUSB; 34° 10′ 54″ N, 117° 19′ 03″ W), in San Bernardino County, California. Following two failed attempts in 2003, the pair's second attempt in 2004 produced two juveniles. This paper briefly reviews the species' breeding range in southern California, including extralimital occurrences, and provides details on the nesting efforts at CSUSB.

The Vermilion Flycatcher occurs regularly from the southwestern United States south through Central America to northern Argentina and the Galápagos Islands (Wolf and Jones 2000, Howell and Webb 1995). Its breeding range extends locally north to California, Nevada, Utah, and Oklahoma (Wolf and Jones 2000). In southern California the Vermilion Flycatcher breeds very locally in the deserts (Garrett and Dunn 1981, Small 1994). It was formerly more widespread in the Imperial, Coachella, and lower Colorado River valleys, but loss of riparian habitat has reduced its numbers there (Rosenberg et al. 1991). Away from the Colorado River, regular breeding is currently known from only a few locations in San Bernardino County, including Covington Park in Morongo Valley, Yucca Valley Golf Course, and recently Luckie Park in Twentynine Palms (Small 1994, E. A. Cardiff pers. comm.). The Vermilion Flycatcher also breeds regularly along the Mojave River between Helendale and Victorville and in Apple Valley (R. L. McKernan and S. G. Myers pers. comm., Small 1994, *N. Am. Birds* 54:423). Elsewhere in California's deserts, additional locations of recorded nesting, more or less sporadic, include Mason Valley, Vallecito Valley, Borrego Valley, and near Jacumba, San Diego County (S. G. Myers pers. comm., Small 1994, Unitt 2004); Ridgecrest, China Lake, South Fork Kern River Valley, and California City, Kern County (*Natl. Audubon Soc. Field Notes* 48:989, S. G. Myers pers. comm.); and Leona Valley and Lancaster, Los Angeles County (*Natl. Audubon Soc. Field Notes* 48:989, 52:504). On the coastal slope of southern California, Vermilion Flycatcher breeding has been confirmed at only eight locations, and suspected at two more (Table 1).

On 11 March 2003 I observed a male Vermilion Flycatcher singing and performing courtship display flights along the northwest edge of the athletic fields at CSUSB, with a female accompanying the male on 14 March. On 31 March Anthony Metcalf and I observed the female constructing a nest approximately 10 m above the ground in a fork in the outer branches of a long-needled ornamental pine tree. The female continued to build through 3 April and was first observed incubating on 12 April. I did not see the male contribute to the nest's construction. While the female was on the nest the male foraged and often perched approximately 1 m from the nest but did not interact with the female. The male also perched in the tree near the nest while the female foraged. On 15 April I returned to find that the nest had been destroyed, apparently by either depredation or heavy rain the previous day. The pair was foraging in a small grove of thornless honey locust trees (*Gleditsia triacanthos* var. *inermis*) and non-native pine trees approximately 50 m northwest of the destroyed nest. I monitored the pair periodically and on 9 May found the female incubating again. The second nest was located approximately 4 m above the ground in a fork in the interior crown of a thornless honey locust tree. On 15 May a single nestling

Table 1 Vermilion Flycatcher Breeding Records in Cismontane Southern California

Location	Year(s)	Outcome	Source
Balboa Park, San Diego Co.	1958–1960	multiple successful broods	Crouch (1959), *AFN* 14:324, 14:478
near Santee, San Diego Co.	1958	fledged 3 young	Crouch (1959)
Bonita, San Diego Co.	1968	pair feeding 3 young	Unitt (1984)
near Camarillo, Ventura Co.	1988	fledged 1 young	*Am. Birds* 42:1341
Santa Barbara Canyon (near Cuyama Valley), Santa Barbara Co.	1992	"probably successful"; "immature" observed	Lehman (1994)
Chino, San Bernardino Co.	1995	fledged 2 young	R. McKernan (pers. comm.)
Warner Valley, San Diego Co.	1997–2001	fledged 2 young in 1997; nest with nestlings in 2000; pair in 2001	Unitt (2004)
Singing Hills/Rancho San Diego, 5 mi. ESE El Cajon (suspected), San Diego Co.	1999–2000	pair; singing male	Unitt (2004)
Bonsall, San Diego Co.	2000	fledged 2 young	Unitt (2004)
El Toro (suspected), Orange Co.	2002	pair with presumed juvenile	D. Willick (pers. comm.)
San Bernardino, San Bernardino Co.	2003–2004	fledged 2 young	this paper

was in the nest, and I observed both parents feeding it through 18 May. On 20 May I encountered the pair of adults near the nest, but the young bird was missing. Seeing no activity at or near the nest, I concluded that the second breeding attempt had also failed. The nestling could not have been more than 10 days old, too young to fledge, according to published data (reviewed by Wolf and Jones 2000). Following the second nesting failure, I searched for the birds only sporadically over the next several months. I did not observe any other nesting attempts in 2003, and I saw the male for the last time on 22 July.

On 15 March 2004 I again found a pair of Vermilion Flycatchers (presumed to be the same individuals) at the athletic fields at CSUSB. On 20 and 21 March I observed the female building a nest approximately 15 m above the ground in a fork in the outer branches of a long-needled ornamental pine. Again I did not observe the male contribute during nest-building. On 30 March the female was incubating, but on 5 April I discovered the nest on the ground below its original position in the tree. The birds remained in the area, and on 27 April I again observed the female incubating. This time the nest was placed approximately 6 m above the ground in a fork along the main trunk in the interior crown of a thornless honey locust tree. The female continued incubating through 12 May. From 13 to 20 May I observed the male and female feeding two nestlings, with the male occasionally bringing food to the female on the nest, which she in turn fed to the nestlings. On 27 May the parents were feeding the two fledglings in a nearby tree, and on 2 June they were feeding the fledglings in a tree approximately 50 m southeast of the nesting location. I observed one of the juveniles again on 15 June, and the two adults on 21 June 2004.

In summary, a pair of Vermilion Flycatchers made four nesting attempts over the course of the 2003 and 2004 breeding seasons, with their fourth attempt in May–June 2004 resulting in the successful fledging of two juveniles. The initial three attempts

resulted in nest failure. Although the Vermilion Flycatcher breeds regularly in eastern San Bernardino County, this is only the second reported breeding attempt for the county's coastal slope, and one of only a few for cismontane southern California.

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BREEDING SEABIRDS OF MORROS EL POTOSÍ, GUERRERO, MEXICO

ERIC MELLINK, Departamento de Biología de la Conservación, División de Biología Experimental y Aplicada, Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California (U.S. mailing address: CICESE, P. O. Box 434844, San Diego, California 92143-4844); emellink@cicese.mx

MÓNICA RIOJAS-LÓPEZ, Departamento de Ecología, Centro Universitario de Ciencias Biológicas y Agropecuarias, Universidad de Guadalajara, Guadalajara, Jalisco

Information on the seabirds of northwestern Mexico has accumulated for several decades now, but seabirds along the country's southern Pacific coast remain little studied. Morros El Potosí (17° 31′ 57″ N, 101° 29′ 18″ W; known as "White Friars Rocks" in the American navigation literature) consist of three small islands and several rocks 3 km offshore and 15 km east of the city of Zihuatanejo, Guerrero (Figure 1). The main islands are 50–65 m high (Hydrographic Office 1937) and very steep, with vertical cliffs on their southern faces.

Howell and Webb (1995) reported actual or suspected breeding by Brown Boobies (*Sula leucogaster*), Red-billed Tropicbirds (*Phaethon aethereus*), and Brown Noddies (*Anous stolidus*) on these islands. Eggs of the Bridled Tern (*Sterna anaethetus*) were collected in 1903, and a specimen was collected in 1937, but there are no recent confirmed records of this species breeding on the islands (Howell and Engel 1993, Howell et al. 1990). No further reports on the island's breeding birds exist. We visited the islands on 23 May 2003 and 13–14 May 2004. Restricted by time and landing possibilities, we visited only the largest, eastern island.

Red-billed Tropicbird. This species nests on many islands of western Mexico, with Morros El Potosí being southernmost of the known localities (Friedmann et al. 1950,

Figure 1. Morros El Potosí, Guerrero, Mexico.

Photo by Eric Mellink and Mónica Riojas-López

Howell and Webb 1995). Howell and Engel (1993) recorded four or five pairs there on 3 May 1992. In both 2003 and 2004 we observed adults in flight, a few nests with chicks, and some fledglings. From this evidence we estimated that El Potosí supported no more than a few dozen breeding pairs. However, the larger Red-billed Tropicbird colony at Farallón de San Ignacio in northern Sinaloa contained only the latest-nesting individuals in May 2003 and May 2004 (José Alfredo Castillo pers. comm.), suggesting that El Potosí could support over 100 pairs earlier in the season. Visits between January and March would yield a firmer estimate of colony size.

Brown Booby. The colony at El Potosí was photographed by Goldman (1951), and Howell and Engel (1993) counted 6000–6500 individuals on 3 May 1992. We are not aware of any other documentation of this colony.

Morros El Potosí lie between the reported ranges of *S. l. brewsteri* and *S. l. etesiaca* (Schreiber and Norton 2002), which differ in the extent of white on the heads of males; *etesiaca* has the white more restricted around the base of the bill. Goldman (1951) considered the boobies at Morros El Potosí to be *brewsteri*. We compared the males at the colony with the descriptions by Goss (1888), Thayer and Bangs (1905), Wetmore (1939), and with photographs by Philip Unitt of specimens of both subspecies at the American Museum of Natural History, New York; we agree on the subspecific identity.

The colony of Brown Boobies at Morros El Potosí (Figure 2) is the densest we have seen. In 2004, using two 50-m lines with points every 5 m, we estimated nest density through point-centered quadrats (Pollard 1971). One line ran up one of the slopes of the island; the other, along the narrow top. We calculated a density of 2078 nests per hectare on the slope and 3325 nests per hectare along the top. Because of the inaccessibility of the other two islands, and time constraints, we were unable to estimate the total colony size with any precision.

The boobies' nesting chronology was similar in 2003 and 2004, their nests containing mostly eggs or small chicks at the time of our visits in both years (Table 1). We

Figure 2. Brown Boobies nesting on Morros El Potosí.

Photo by Eric Mellink and Mónica Riojas-López

Table 1 Contents of Brown Booby Nests on Morros El Potosí

	23 May 2003	13 May 2004
1 egg	12	10
2 eggs	19	11
1 egg, 1 chick	6	3
2 eggs, 1 chick	0	1
1 chick	12	13
2 chicks	1	0
Total	50	38

observed a few pairs courting, plus some larger chicks and juveniles. Brown Boobies tend to nest earlier than this on other islands of western Mexico (Mellink 2000). The colony at Farallón de San Ignacio finished nesting in April 2003 and in May 2004. The colony at San Jorge, Sonora, was nearly finished with breeding in May 2004. In 2003, breeding was depressed early in the season by El Niño conditions at San Jorge. We lack information to explain the relatively late breeding at Morros El Potosí.

Molt in this species is little known (Schreiber and Norton 2002). In May 2004, while attaching capillary tubes to determine diving depth (see below), we examined 13 females and 12 males, and all but one female and three males were growing at least one new rectrix in the middle portion of the tail.

We determined the maximum diving depth of nine males and five females by using capillary tubes attached to a central rectrix (Burger and Wilson 1988) for one day. To minimize the potential for variations due to water mass, we calibrated the method with one controlled immersion. The birds' maximum diving depth was 1.55 ± 0.74 m (mean ± standard deviation), with no difference between males and females.

Three birds to which we attached capillary tubes at 1130, 1210, and 1216 hours on 13 May 2004 were replaced by mates at their nests by 1330 of that day. Two of these individuals had returned by 0830 the next morning. Overall, however, 61% of the tube-outfitted birds could not be relocated the following morning (0800–1200). At Isla San Jorge and Farallón de San Ignacio, in the Gulf of California, Mellink and José Alfredo Castillo (pers. comm.) have been recovering most capillary tubes the morning after they are attached. This difference might suggest that the boobies at El Potosí were foraging farther from the colony. We did not see feeding by adults, but some juveniles were feeding near the beach of Barra El Potosí.

A piece of fish on the ground and two regurgitations by boobies consisted of the Bigwing Halfbeak (*Oxyphorhampus micropterus*). One male, which regurgitated three halfbeaks, recorded a maximum diving depth of 1.96 m. Another regurgitation contained juveniles of the Whitemouth Jack (*Uraspis helvola*).

Bridled Tern. This species (Figure 3) was a common breeder on the island, although much less abundant than the Brown Booby. It was difficult to assess population size, as this species nests in crevices. Nests were all over the island, often very close to Brown Booby nests. Our best estimate, based on the nests and individuals seen, was several hundred pairs. Eleven of 12 nests examined in 2003 held a single egg, the other a chick. All of the ten nests examined in 2004 contained one egg.

A single regurgitation contained fish larvae (of apparently two species), one damselbug (Hemiptera: Nabidae), and two winged ants (Hymenoptera: Formicidae). The contents of this regurgitation are within the described diet of the species (Haney et al. 1999). At about 0800 hours on 14 May 2004 we observed a single-species feeding flock of about 50 Bridled Terns at sea near the estuary of Laguna El Potosí.

Figure 3. Bridled Tern on Morros El Potosí.

Photo by Eric Mellink and Mónica Riojas-López

Brown Noddy. This species had not been confirmed nesting on El Potosí, although Howell and Engel (1993) suspected it to do so. We found a single egg in each of the four nests we examined in 2003. From counts of adults in 2003 and 2004, we estimated the population at approximately 100 pairs. We saw a single-species feeding flock of 50–60 Brown Noddies near Cerro de los Pirules, the closest point on the mainland.

The seabird colonies at Morros El Potosí seem to be free from direct threats. Landing is difficult, effectively preventing use of the islands by fishermen and other visitors. The islands' proximity to the fishing village makes a camp there unnecessary. We saw no gulls and found no evidence of rats or other predators; indeed, abandoned eggs remained intact without any traces of predation.

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PUNCTURE-EJECTION OF OWN EGG BY LEAST BELL'S VIREO AND POTENTIAL IMPLICATIONS FOR ANTI-PARASITISM DEFENSE

BRYAN L. SHARP, Department of Biology, San Diego State University, 5500 Campanile Drive, San Diego, California 92182, and USGS Western Ecological Research Center, 5745 Kearny Villa Road, Suite M, San Diego, California 92123 (current address: Colegio Americano de Durango, Apartado Postal 495, Durango, Durango 34000, Mexico)

BONNIE L. PETERSON, Department of Biology, San Diego State University, 5500 Campanile Drive, San Diego, California 92182, and USGS Western Ecological Research Center, 5745 Kearny Villa Road, Suite M, San Diego, California 92123 (current address: Merkel & Associates, Inc., 5434 Ruffin Road, San Diego, California 92123)

BARBARA E. KUS, USGS Western Ecological Research Center, 5745 Kearny Villa Road, Suite M, San Diego, California 92123; barbara_kus@usgs.gov

We video-recorded an adult Least Bell's Vireo (*Vireo bellii pusillus*) puncture-ejecting one of its own eggs. The behavior was detected during analysis of footage from 25 vireo nests that we videotaped continuously along the San Luis Rey River near Bonsall, California, in 2000 (Peterson 2002, Sharp 2002). The ejection occurred at 0622 on 21 July 2000 in a nest containing two 5-day-old vireo nestlings (both fledged on 27 July) and the unhatched vireo egg. Prior to ejection, one adult stood in the nest cup and the other was perched on the main branch that supported the nest. The former adult flew away, and the latter moved to the edge of the nest, looked into it, pecked the unhatched egg three times with its closed bill, stopped, and looked into the nest again. This cycle of striking the egg three to five times then looking into the nest was repeated over 44 seconds, during which the adult pecked the egg 27 times. Following the last strike, the adult grasped the egg with its bill on either side of the hole it had created and flew away from the nest with the egg. A vireo returned to the nest 9 seconds later, looked into the nest, but did not lower its head into the nest cup. We could not sex the adult vireos, and they did not vocalize during the time observed. This report is the first of puncture-ejection of an egg by a Least Bell's Vireo.

The two primary reasons a bird may remove an egg from its nest are that the egg is recognized as parasitic (e.g., Rothstein 1974, Sealy and Neudorf 1995) or damaged (Kemal and Rothstein 1988, Mallory et al. 2000). As the egg was the vireos' own, it could not have been recognized as parasitic. We do not know if the egg was damaged, but the fact that the adult struck it 27 times before removing it from the nest suggests that prior damage is unlikely. It is possible that since the egg had not hatched by day 5 of the nestling period, the vireo recognized it as inviable and ejected it. However, unhatched eggs are generally left in active vireo nests and are found in nests after fledging. In 2000, of nests with at least one hatchling (N = 78), unhatched eggs were encountered in 23 of 30 nests (77%) in which the number of hatchlings was lower than the number of vireo eggs laid (in seven nests, eggs disappeared for unknown reasons). Unhatched eggs were detected in nests with chicks ranging in age from 5 to 9 days during visits to band nestlings. Because we collected unhatched eggs when we banded to prevent possible damage that could attract ants, known nest predators of Least Bell's Vireo chicks (Peterson et al. 2004), we do not know how long they would have remained, but, from our experience, we believe it is likely that the majority of inviable eggs are left in nests throughout the period that they are active. We have not encountered depredated nests at which we could document that damaged inviable eggs attracted predators, but a behavior such as egg ejection that minimized such a risk would clearly be beneficial in enhancing nesting success.

Another possible explanation for the ejection is that the egg was mistaken for a fecal sac. To evaluate this possibility, we reviewed all videotapes from the day of hatching to two days after the reported ejection to compare behaviors associated with fecal-sac removal and those observed during egg-ejection. In 80 observed instances of fecal-sac removal, the maximum number of pecks into the nest in any one instance was four. On three occasions the adult pecked twice, and in all other instances, the adult lowered its head into the nest only once before removing the sac. Moreover, in all but three of the 57 fecal-sac removals from the day of egg-ejection onward, the rump of the nestling vireo was visible as it excreted the fecal sac and the adult picked up the sac in its bill; fecal sacs are also smaller than vireo eggs. Although the motor patterns of fecal-sac removal can be similar to those of egg-ejection (Rothstein 1975a, Moskat et al. 2003), the behaviors we observed during egg-ejection were extreme and distinctive relative to the typical treatment of fecal sacs.

The ability to puncture-eject eggs represents a behavior that might provide the basis for the evolution of an additional form of defense against parasitism by Brown-headed Cowbirds (*Molothrus ater*). Puncture-ejection has been shown to be an effective defense against parasitism in another small host, the eastern Warbling Vireo (*Vireo gilvus gilvus*, Sealy 1996, Sealy et al. 2000), although the smaller western Warbling Vireo (*V. g. swainsoni*) is not an ejector (Sealy 1996, Sealy et al. 2000). Bill size may constrain the latter subspecies from ejecting a cowbird egg (Rohwer and Spaw 1988, Sealy et al. 2000), and the Least Bell's Vireo (mean mass 8.5 g, Brown 1993) is smaller than *V. g. swainsoni* (mean masses 11.9 g, Gardali and Ballard 2000). Therefore, although our report indicates that Least Bell's Vireos have the ability to remove their own eggs, it does not necessarily follow that they can remove a cowbird egg from a nest. Experimental tests will be necessary to determine whether vireos recognize cowbird eggs as foreign and, if so, whether they can puncture and eject them (*sensu* Bolen et al. 2000, Rothstein 1974, 1975a, b, 1976, Sealy 1996, Sealy and Neudorf 1995). Given the current endangered status of this host, such a study will not be feasible until Least Bell's Vireo populations have increased to the point where the subspecies is no longer endangered.

We thank Mike Wellik for assistance with camera equipment in the field and the Bureau of Reclamation and Arizona Game and Fish Department for the loan of five camera systems used in this study. We also thank Josephine Falcone for reviewing hours of video in search of fecal sacs. Comments by Stephen I. Rothstein and Spencer G. Sealy improved the manuscript. This work was funded by the California Department of Transportation, District 11, and by grants to the first two authors from the Garden Club of America (through the Cornell Laboratory of Ornithology), the Frank M. Chapman Fund of the American Museum of Natural History, Sigma Xi, Los Angeles Audubon Society, and the San Diego State University Evolutionary Biology Program Area.

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BOOK REVIEWS

San Diego County Bird Atlas, by Philip Unitt. 2004. Proceedings of the San Diego Natural History Museum, No. 39. 644 pages, numerous color maps and photos. Hardback $80 (ISBN 0-934-797-21-8).

San Diego County, in southernmost California, boasts the largest number of species for any county or area of comparable size in the United States—almost 500, more than most states. Commensurate with this large total comes this heavy tome, packed with information and looking more like the avifaunal work for some states than for a "mere county." As well as a large avifauna, San Diego County lays claim to a burgeoning human population which, as Unitt notes, combines third-world growth rates with first-world consumption rates. The inevitable result is increasing pressure on all habitats throughout the county. The production of the San Diego County Atlas (hereafter Atlas) coincided with the development of a multiple-species conservation plan for metropolitan San Diego and similar plans for other parts of the county. Thus, the Atlas offers a timely benchmark from which the efficacy of such plans can be evaluated, as well as an exhaustive model of how a regional avifaunal work should be approached.

Following the introduction and acknowledgments comes a thorough chapter on methods (grid cells were approximately 5 km, or 3 miles, on a side); one table lists observers who contributed data directly and to relevant Christmas Bird counts, and another (Table 4), which lacks a title (and would have been better as an appendix), lists by grid cell the observers, hours of coverage, and total species recorded. The Atlas is based largely on data obtained 1997–2002 and includes census data for both breeding and winter seasons—a great leap in coverage over a breeding bird atlas, but also a huge increase in workload. Paradoxically, the same growing human population that pressures the environment also provides a large pool of atlas volunteers—something that regions with sparse human population densities cannot match (e.g., the state of Nevada). At the outset, Unitt set coverage goals for each of the 479 grid cells, goals met for 97% of cells in both summer and winter; consequently, the birds of San Diego County are now among the best known in North America. Historical data were also researched, to put present patterns in context, and all species recorded in the county have accounts. Thus the Atlas is much more than an atlas of breeding and wintering species: it is an updated and expanded version of Unitt's 1984 work, *Birds of San Diego County*.

After the methods comes a chapter summarizing results of the Atlas, during which 11 species were confirmed nesting in the county for the first time, ranging from the Sooty Tern to Yellow-headed Blackbird. Range extensions were detected for many other species, both breeding (Cassin's Kingbirds spreading to higher elevations) and wintering (Gray Vireos in little-visited desert habitats). Five species were added to the county list during the Atlas period (and 29 have been added since Unitt's 1984 work). The Atlas also highlights the position of San Diego County at the edge of many species' ranges along the Pacific coast, e.g., as the southern breeding limit for the Belted Kingfisher and Swainson's Thrush. More sobering is that at least 70 species, close to 15% of the county list, have experienced range contractions at some point in recorded history, due to multiple factors and at scales ranging from global (Peregrine Falcon) to local (California Quail). Other subjects discussed in this chapter are annual irregularity in occurrence, cowbirds and their hosts, exotic species, and climate change.

The "plan of the species accounts" chapter is followed by an overview of geography, climate, and habitat (for which "developed" is a notably extensive category). Two color maps (from which I assume the atlas grid was inadvertently omitted) show elevation and habitat; the latter, while helpful, is at so fine a scale that some details are virtually impossible to discern, and a full-page map would have been easier to use. Then come a discussion of conservation concerns, with two maps that summarize

the total number of species by grid cell in both breeding and winter seasons, and a short chapter on wildfire, an important but controversial component of the county's ecology. The species accounts take up 555 pages and are followed by appendices that list: (1) all species and subspecies of San Diego County birds (including notations for breeding status, regulatory status, and level of documentation); (2) scientific names of plants mentioned in the species accounts; and (3) a list of photos used in the species accounts, with photographers and location details (which are uneven at best). Perhaps inevitably, given the dynamic nature of regulatory status, some errors and typos crept into Appendix 1: the status for the Vermilion Flycatcher is attributed to the Dusky-capped Flycatcher; the Xantus' Murrelet is now considered threatened, not of special concern; and some special concern species are not designated as such, e.g., the Black Swift and Loggerhead Shrike. Seventeen pages of literature cited precede the index, and the book jacket features a striking male Costa's Hummingbird (front cover) and a flock of Elegant Terns (back cover).

The sequence of the species accounts follows the most recent proclamations of the American Ornithologists' Union, so the book starts with waterfowl and then gamebirds before one reaches the more familiar realm of loons. Following the main accounts is a section treating several exotic and "hypothetical species" (i.e., species whose occurrence in the county is deemed hypothetical, or unproven). The main species accounts begin with a brief note on general habitat and status in the county, followed by up to four seasonal sections whose inclusion varies (by relevance) with species. Sections on breeding distribution and nesting interpret and expand upon the breeding distribution map and the chart of nesting schedules. A migration section gives arrival and departure dates, migration routes, etc., and the winter section expands upon the winter distribution map with comments on habitat, abundance, etc. Each account for a regularly occurring species usually features at least one map; breeding and winter maps are combined for some species (e.g., Cassin's Vireo); in other cases, separate subspecies warrant their own maps (e.g., Sage Sparrows). Lacking maps are some rare breeders (e.g., American Dipper) and winter visitors (e.g., Williamson's Sapsucker) and species that occur only as transient migrants (e.g., Baird's Sandpiper). The nesting and migration sections treat all occurrences regardless of seasonality, whereas winter was defined as December to February (with a few exceptions). A conservation section of varying length points out trends in population or distribution, discusses known and potential causes for these trends, and sometimes makes suggestions that could be taken up by conservationists. These species accounts are packed with information yet very readable—a rarity in this age of uninspired writing (and editing).

For most species that exhibit geographic variation, a taxonomy section notes which subspecies occur(s) in the county. When multiple subspecies occur, short but helpful notes on their distinguishing characters are usually provided (such information is sometimes also given when only one subspecies occurs). These sections range from straightforward statements (e.g., for the Common Merganser) to succinct and helpfully field-oriented synopses (e.g., Willow Flycatcher), to quite thorough mini-treatises with opinions on the validity of some subspecies (e.g., Fox Sparrow). Occasional lapses include no section for some species, such as the Black Swift and Magnificent Hummingbird, although it is unclear what the baseline was for acknowledging subspecies and their validity. Nonetheless, the discussions of taxonomy, with their biogeographic context and field-identification pointers, are a great bonus of the atlas, one unrevealed by the book's title or even perhaps by casual perusal.

The overall design is generally effective and little space is wasted (unlike layouts full of white space, which are common to so many books). My only dislike of the Atlas relates to the color photos that accompany most species accounts; the purpose of these photos eludes me. The Atlas is written in an accessible but somewhat technical vein, for ornithologists, serious birders, and conservationists. Its hefty bulk, dense text, and high cost conspire against it cultivating a popular market—for whom color

photos might be a plus (as in the more public-friendly *Oklahoma Breeding Bird Atlas*, by Reinking). Some of the photos are quite attractive but the quality varies considerably, and none is helped by the small scale at which they are reproduced (most 3.2 inches wide). Many were taken in or near San Diego County, but many weren't, and I see no value to having images of "plastic" ducks (i.e., birds photographed in zoos) or of photos from as far afield as Alaska and Florida. The photos help break up the text, but so do the maps, and fewer but larger photos, or even good black-and-white artwork, would be preferable—and might have lowered the cost? How many people will pay $80 for a county bird atlas, even if it is the most comprehensive one ever produced in North America?

By now the myriad strengths of this ambitious project should be apparent. It offers a fascinating account of a diverse avifauna, and will be of great value to all western field ornithologists, southern California conservationists and agencies, and anyone else with an interest in the status, distribution, and taxonomy of North American birds. Importantly, in the increasing cluster that defines southern California, the Atlas provides baseline data that have the potential to help improve the quality of life for both avian and human inhabitants of San Diego County. Last but not least, note the relatively short lapse between completion of field work and publication—testament to good planning, which included funds for writing and editing, and to the almost single-minded dedication of the author, to whom all inhabitants of San Diego County should be grateful (whether or not they realize it or have ever looked at a bird!).

I thank Lyann Comrack for comments on a draft of this review.

Steve N. G. Howell

Oklahoma Breeding Bird Atlas, by Dan L. Reinking (editor). 2004. University of Oklahoma Press, Norman; www.oupress.com. xii + 519 pages, over 200 color maps and photos. Hardback $59.95 (ISBN 0-8061-3409-7); paperback, $34.95 (ISBN 0-8061-3614-6).

What does Oklahoma have to do with western birds you may ask? Well, this attractively laid out and informative work (hereafter the OBBA) should help answer such a question. Almost 230 bird species are known or assumed to have nested in Oklahoma, which straddles the biogeographic divide in North America between "East" and "West." Species breeding in this under-regarded state range from the Henslow's Sparrow to the Black-throated Sparrow, from the Wood Thrush to the Mountain Bluebird. Indeed, within a single atlas block there were breeding records for both Chuck-will's-widow and Common Poorwill! So, while Oklahoma is not a western state, it does offer a view into where the West starts from an avian perspective, and why.

The OBBA begins with acknowledgments, an introduction (discussing the work's genesis, methods, codes used, limitations, and a brief summary of results), and a succinct chapter on the state's vegetation. Then come individual species accounts, followed by two appendices (notes on an additional 12 species not recorded in the atlas years, and samples of the data forms), a bibliography, index, and the author and photo credits.

Atlasing work spanned five years (1997–2001), largely involved volunteers, and was coordinated by the George M. Sutton Avian Research Center. Protocols followed recommendations of the North American Ornithological Atlas Committee, with the census block size being the U.S. Geological Survey 7.5-minute quadrangle (about ten square miles). Stratified sampling resulted in a total of 583 blocks being selected, of which only ten were unvisited (because of land-access issues and a shortage of volunteers). The main limitation in any such project covering an area the size of Oklahoma is that only a small area can be surveyed—in this case about a twelfth of the state's total land surface. But this was considered adequate to provide a good representation of the current distribution of most breeding species. (Fittingly, the

Scissor-tailed Flycatcher, Oklahoma's state bird, was recorded from 92.3% of blocks visited.) As well as providing important distributional information, the OBBA was viewed as a vehicle for public education, and the species accounts were written with this in mind—thus the text is very readable and each account features an attractive color photo of the species.

Rather than discussing here details of the breeding birds of Oklahoma, I recommend you examine a copy of the atlas for yourself. In simply leafing through the accounts and scanning the maps one is provided with a wealth of data to stimulate questions that can be followed up in the text, or that can be related to the introductory chapter on vegetation zones. Note, though, that a list of references is provided at the end of each species account, rather than direct citations—which can make it frustratingly time-consuming to track down specific points.

A couple of other, admittedly minor, points could be mentioned here that might benefit those working on atlases. First, including information from outside an area covered is always helpful for context. As with many works, however, this information in the OBBA tends to be uneven and could have been checked more carefully; e.g., American Goldfinches reportedly breed south only to northeast (rather than southern) California. Second, more diligent copy-editing could have corrected or clarified syntax such as "A nocturnal migrant, these grebes..." (p. 20) or that House Finches "Formerly [presumably meaning originally, rather than no longer do so] bred from southwest Canada ... south to Baja California" (p. 455).

But in general this is an excellent and very informative volume, one that will benefit field ornithologists and conservationists alike, both in western and eastern North America. All involved are to be congratulated in producing the OBBA—and in a timely manner: note that the interval from completing field work to publication was only three years, significantly shorter than many county atlases in California.

Steve N. G. Howell

Black-throated Sparrow

Sketch by Narca Moore-Craig

FEATURED PHOTO

REVISITING AN OLD QUESTION: HOW MANY SPECIES OF SKUA OCCUR IN THE NORTH PACIFIC?

STEVE N. G. HOWELL, Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, California 94970

The taxonomy, identification, and distribution of skuas (currently genus *Stercorarius* but formerly *Catharacta*, AOU 2000) have long been, and continue to be, the subject of debate and uncertainty. Most authors now recognize six taxa constituting four species: the Great Skua (*Stercorarius skua*), breeding in the North Atlantic; the Chilean Skua (*S. chilensis*), breeding around southern South America; the South Polar Skua (*S. maccormicki*), breeding around Antarctica; and the Brown Skua (*S. antarctica*, with subspecies *antarctica*, *lonnbergi*, and *hamiltoni*), breeding widely on islands in the southern oceans (Malling Olsen and Larsson 1997).

Although it is now believed that skuas off the Pacific coast of North America are, by default, South Polar Skuas, this "conventional wisdom" is relatively recent. For example, the fifth edition of the American Ornithologists' Union *Check-list of North American Birds* (1957) listed three taxa of skua from the Pacific coast of North America: *chilensis*, *antarctica*, and *lonnbergi*— that is, almost all skuas except the South Polar! Identification difficulties and potential mislabeling of old specimens (Lee 1993) caused this confusion. It was not until a critical study by Devillers (1977) that the South Polar Skua was recognized as a component of the North American avifauna, and the other three southern taxa were removed from the North American list. The South Polar Skua is now known to be a long-distance, transequatorial migrant in both the Atlantic and Pacific oceans (Devillers 1977, Furness 1987).

Devillers (1977) summarized the skuas' identification characters primarily on the basis of specimens of adult birds, which generally show distinct species-specific plumage differences. Immature plumages of skuas vary considerably, however, and many taxa look similar; identification criteria for immatures are poorly known because for their first two or more years of life the birds remain at sea, where they range widely and are difficult to study. Hybridization between some taxa (notably the South Polar Skua and Brown Skua in the Antarctic Peninsula region; Parmelee 1988) adds another dimension of complexity. Any clear understanding of identification criteria—and species' distributions—will need to address these issues.

Recently, I summarized occurrence patterns and molt strategies of presumed South Polar Skuas off California and outlined plumage variation in these birds (Howell 2004). Almost all California skua records lie between April and October, with a peak from August to October when the birds are migrating south. Most skuas off California appear to molt on a schedule like that of adults, with primary molt completing in September and October (presumably having started in May and June elsewhere in the North Pacific). About 20% of birds appear to be juveniles, which start their first primary molt between mid July and mid September and probably complete it sometime between December and February. Most California skuas do resemble South Polar Skuas: they have relatively narrow wings and small bills, and their plumage is cold-toned and relatively uniform on the head and body. Many birds molting on the adult schedule are strikingly dark brown overall with limited pale buff mottling on the hindneck, perhaps an immature plumage of two- or three-year-olds (Howell 2004). However, one bird at Cordell Bank, off Sonoma County, discussed by Howell (2004; plates 9–11), looked atypically broad winged and bulky, with a very stout bill, all features more suggestive of the Brown Skua. The photos do not allow the bird to be

positively identified as a Brown Skua, given our present limited knowledge, but they do show a bird not typical of the South Polar Skua.

On 21 August 2004, I noted another skua not typical of the South Polar about 5 miles off Fort Bragg, Mendocino County, California. The bird flushed off the sea and flew across the bow of our boat, within 100 m, and was soon lost to view. Matthew Matthiessen was able to obtain a few digital images of the bird before it disappeared (back cover, upper). This bird immediately stood out as something different from over 100 South Polar Skuas I have seen off California: the mantle and scapulars were strikingly mottled with pale brown, forming a contrasting pale "saddle"; the head showed a darker-capped effect, and the underwing coverts were mottled brown, not solidly blackish brown. The bird was completing wing molt, with the outer two primaries not fully grown (Figure 1) and some molt apparent in the secondaries; the bird was thus on a molt schedule like adults of southern-hemisphere skuas, and was not in its first molt cycle (Howell 2004). With primary molt concluding, the bird would be expected to be in fresh plumage overall; thus the pale saddle is unlikely to have been due to old and bleached feathers. The appearance of this bird is atypical for any age of the South Polar Skua but is quite similar to that of adult or near-adult Brown Skuas from southern populations (*S. l. lonnbergi*); for example, some birds I photographed at Macquarie Island, south of New Zealand, on 17 December 2004 (back cover, lower). Views of the Mendocino bird were inadequate to determine much about its overall size and structure, although the bill was relatively stout and the bird looked to be at the bulky end of the spectrum for a South Polar Skua.

Unfortunately, photographs and field observations have limitations—and establishing the identification of immature skuas seems to be one of these. The recent documentation through genetic analysis of apparent Brown Skuas in Europe (Votier et al. 2004) has overturned the conventional belief that South Polar Skua is the only

Figure 1. Unidentified skua, possibly not a South Polar Skua, about 5 miles off Fort Bragg, Mendocino County, California, 21 August 2004. Note the molt in the primaries and secondaries.

Photo by Matthew Matthiessen

southern skua that migrates to the northern hemisphere. But whether the occasional odd birds in the North Pacific are Brown Skuas, extreme variants of the South Polar Skua, hybrids—or perhaps some combination of all three—remains uncertain. Clarification may require in-hand examination and perhaps genetic analysis. Nevertheless, I encourage observers in the pelagic realm to continue studying and documenting variation in the skuas off the Pacific coast of North America. Those who find any sick or beached birds should take measurements (especially tarsus, exposed culmen, bill depth at posterior end of nares, and wing chord) and, if possible, blood samples or feathers as well as photos; any dead birds should be deposited in a museum collection. With the accumulation of more data, some questions may be answered—and perhaps new ones posed.

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Back cover "Featured Photos" by © Matthew Matthiessen of Ukiah, California: Skua (*Catharacta sp.*), Mendocino County, California, 21 August 2004 (top); and © Steve N. G. Howell of Stinson Beach, California: Brown Skua (*Catharacta lonnbergi lonnbergi*), Macquarie Island, New Zealand, 17 December 2004 (bottom).

WESTERN BIRDS

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Front cover photo by © Tom Shermer of New Westminster, British Columbia: McKay's Bunting (*Plectrophenax hyperboreus*), Iona Island, British Columbia, 19 December 2004.

Western Specialty:
Long-billed Curlew

Photo by © David Cardinal of Portola Valley, California:
Long-billed Curlew (*Numenius americanus*)
Palo Alto, Califonia, August 2001

WESTERN BIRDS

Volume 36, Number 2, 2005

REPORT OF THE CALIFORNIA BIRD RECORDS COMMITTEE: 2003 RECORDS

MIKE SAN MIGUEL, 2132 Highland Oaks Drive, Arcadia, California 91006; sanmigbird@aol.com

TODD McGRATH, 13910 Old Harbor Lane, #107, Marina del Rey, California 90292; skua@msn.com

ABSTRACT: The California Bird Records Committee reached decisions on 256 records involving 90 species and one species pair, endorsing 213 of them. Species new to California were the Cory's Shearwater (*Calonectris diomedea*), Little Shearwater (*Puffinus assimilis*), Oriental Turtle-Dove (*Streptopelia orientalis*), and Magnificent Hummingbird (*Eugenes fulgens*). The Falcated Duck (*Anas falcata*) and Crested Caracara (*Caracara cheriway*) were elevated to the main list from the Supplemental List. The Cackling Goose (*Branta hutchinsii*) was also added to the main list because of the determination by the American Ornithologists' Union (Banks et al. 2004) that this group of subspecies should be recognized as a full species. With these additions, plus those of the Common Eider (*Somateria mollissima*), Slaty-backed Gull (*Larus schistisagus*), and Stonechat (*Saxicola torquatus*), to be addressed in the next report, California's bird list stands at 630 species, ten of which are non-native. Potential first state records of the Pink-backed Pelican (*Pelecanus rufescens*) and European Goldfinch (*Carduelis carduelis*) were not accepted on grounds of questionable natural occurrence, and a report of Black-capped Petrel (*Pterodroma hasitata*) was not accepted because of concerns regarding identification.

This 29th report of the California Bird Records Committee (hereafter the CBRC or the Committee) details the evaluation of 256 records involving 262 individuals of 90 species and one species pair. The formal acceptance of specimens of the Yellow Rail (*Coturnicops noveboracensis*; 8 records), Snowy Owl (*Bubo scandiacus;* 2 records), and Common Redpoll (*Carduelis flammea*; 11 records), as well as a review of historical records of the Blue-headed Vireo (*Vireo solitarius;* 22 records, 20 accepted, 2 not accepted) had a noticeable effect on the statistical data for this report. Although most records treated here pertain to birds found in 2003, the period covered by this report spans the 115 years from 1889 through 2003. The Committee accepted 213 records involving 220 individuals of 76 species and one species pair for an acceptance rate of 83.2%. Thirty-eight records involving 38 individuals were not accepted because of insufficient documentation or

because descriptions were inconsistent with known identification criteria. Five additional records were not accepted because of questions concerning the bird's natural occurrence. Counties best represented by accepted records were San Diego (23 records), Los Angeles (19), Monterey (15), Lassen (13, 12 of which were old records of the Common Redpoll), Inyo (12), Orange (12), San Francisco (12, 9 of which were from Southeast Farallon I.), Kern (10), and Imperial (9). Records from 22 other counties involving an additional 88 accepted records are also noted.

The Committee has now been in existence 34 years and has evaluated the documentation for thousands of bird records. As our bylaws instruct, the Committee was established, in part, to "provide a means by which sight records can gain universal acceptance as valuable scientific data," and it strives to fulfill this role. Highlights of this report include the addition of Cory's Shearwater (*Calonectris diomedea*), Little Shearwater (*Puffinus assimilis*), Oriental Turtle-Dove (*Streptopelia orientalis*), and Magnificent Hummingbird (*Eugenes fulgens*) to the state list. The Falcated Duck (*Anas falcata*) and Crested Caracara (*Caracara cheriway*) have been elevated to the main list from the supplemental list. The Cackling Goose (*Branta hutchinsii*) was also added to the state list because of the determination by the AOU (Banks et al. 2004) that this group of subspecies should be recognized as a full species. The Committee placed the Demoiselle Crane (*Anthropoides virgo*) on the supplemental list on the basis of a record from Staten I., San Joaquin Co., 30 Sep 2001–18 Feb 2002 (Cole and McCaskie 2004). As will be discussed in the next report, the Common Eider (*Somateria mollissima*), Slaty-backed Gull (*Larus schistisagus*), and Stonechat *(Saxicola torquatus*) have also been accepted to the California list. Details of the eider were published by McCaskie and Vaughan (2004). With the addition of these 10 species, California's list stands at 630 species, ten of which are not native and two of which have been extirpated within historical times.

Other highlights of this report include two Red-tailed Tropicbirds (*Phaethon rubricauda*), the first coastal Blue-footed Booby (*Sula nebouxii*) in 14 years, the third record of the Black Vulture (*Coragyps atratus*), three spring White-rumped Sandpipers (*Calidris fuscicollis*), the fourth record of Baird's Sparrow (*Ammodramus bairdii*), and northern California's first Streak-backed Oriole (*Icterus pustulatus*), in Monterey Co.

The acceptance rate of 83.2% was above the Committee's overall average acceptance rate of 79.7% (calculated by dividing the total number of accepted records by the total records in all 29 reports). Much of the variance in this report can be explained by the review of the historic records of Yellow Rail, Snowy Owl, Blue-headed Vireo, and Common Redpoll noted above (41 of the 43 records were accepted). The acceptance rate for this report with those 43 records excluded from the calculation is 80.8%. The overall average acceptance rate has trended downward over the past ten reports, with the exception of the 27th report (Garrett and Wilson 2003) and this one. Rottenborn and Morlan (2000) and Cole and McCaskie (2004) discussed trends in acceptance rates through the CBRC's history.

The total of 256 accepted records in this report is higher than the average of 215.3 records per report over the first 29 CBRC reports. The higher number is attributable to the Committee's review of historic records of 8

Yellow Rails, 2 Snowy Owls, 22 Blue-headed Vireos, and 11 Common Redpolls. The Yellow Rail and Common Redpoll specimens, all collected 1889–1912, were thought to have been lost but were recently found at the California Academy of Sciences in San Francisco. The Snowy Owls were collected in 1916 and recently discovered at the Museum of Vertebrate Zoology, University of California, Berkeley. The 22 records of the Blue-headed Vireo that reached final decision in 2003 were the result of the Committee's decision to add this species to the review list in 1998 and to solicit and compile documentation to review historical reports of this taxon before it was recognized as a species by the AOU (1998). The discovery of the specimens of Yellow Rails, Snowy Owls and Common Redpolls illustrate the fact that California field ornithologists—in the course of Committee investigation and other research—still uncover unreviewed historical documentation for birds on the review list.

Each year the Committee examines species on the review list to determine whether they meet with the Committee's general criteria for review under its bylaws (four or fewer records per year over the most recent 10 years) and, if not, whether Committee evaluation is still warranted. For some species, as the Committee accumulates data, patterns and trends of occurrence defining the predictable status and distribution of the species emerge. For such species, if identification is straightforward, the Committee may decide not to review further records. The Painted Bunting (*Passerina ciris*) was removed from the review list on the basis of these criteria and a strong pattern of individuals considered to occur naturally. Records of the Painted Bunting after 2004 will no longer be reviewed. The committee also voted to review records of the Roseate Spoonbill (*Platalea ajaja*) from the period 1974–1978, when this species was not on the review list. The Committee now solicits documentation for Roseate Spoonbill records for all years.

The list of species reviewed by the CBRC is posted at the Western Field Ornithologists' web site (http://www.wfo-cbrc.org). This site also includes the entire California state list, the Committee's bylaws, a reporting form for the direct e-mail submission of records to the CBRC, the addresses of current Committee members, a photo gallery of recent submissions, including several birds published in this report, and other information about the CBRC, WFO, and its journal *Western Birds*.

All documentation reviewed by the CBRC, including copies of descriptions, photographs, and digital images saved on compact disc, videotapes, audio recordings and Committee comments, is archived at the Western Foundation of Vertebrate Zoology, 439 Calle San Pablo, Camarillo, California 93012, and is available for public review. The CBRC solicits and encourages observers to submit documentation for all species on the review list, as well as species unrecorded in California. Documentation should be sent to Guy McCaskie, CBRC Secretary, P. O. Box 275, Imperial Beach, CA 91933-0275 (e-mail: guymcc@pacbell.net).

NEWS AND FORMAT

Committee News. The Committee's voting membership after the 29 January 2005 annual meeting consisted of Jon L. Dunn, Kimball L. Garrett,

Matthew T. Heindel (chair), Marshall J. Iliff, Todd McGrath, Joseph Morlan, Kristie N. Nelson, Peter Pyle, Daniel Singer (vice chair), and John C. Sterling. Guy McCaskie continued his role as nonvoting secretary. Recent Committee members who also voted on many of the records in this report include Luke W. Cole, Richard A. Erickson, Michael M. Rogers, Mike San Miguel, and John C. Wilson.

Format and Abbreviations. As in other recent CBRC reports, records are generally listed chronologically by first date of occurrence, and/or geographically, from north to south. Included with each record is the location, county abbreviation (see below), and date span. The date span usually follows that published in *North American Birds* (formerly *National Audubon Society Field Notes, American Birds*, and *Audubon Field Notes*), but, if the CBRC accepts a date span that differs from a published source, the differing dates are italicized. Initials of the observer(s) responsible for finding and/or identifying the bird(s)—if known and if they supplied supportive documentation—are followed by a semicolon, then the initials, in alphabetized order by surname of additional observers submitting supportive documentation, then the CBRC record number consisting of the year of submission and chronological number assigned by the secretary. All records are sight records unless otherwise indicated. Initials followed by a dagger (†) indicate the observer supplied a supportive photograph or digital image, (‡) indicates videotape, (§) indicates a voice recording, and (#) indicates a specimen record, followed by the abbreviation (see below) of the institution housing the specimen and that institution's specimen catalog number. An asterisk (*) prior to a species' name indicates that the species is no longer on the CBRC review list.

In 2003, the Committee changed the way it reports records and individuals. In this report, as in Cole and McCaskie (2004), the first number in parentheses after the species' name is the number of individual birds accepted by the CBRC through this report, not the number of accepted records; the number of individual birds may be higher than the number of records, as historically the Committee has treated groups of individuals appearing together with a single record number (e.g., a flock of Sprague's Pipits, *Anthus spragueii*). The second number is the number of new individuals accepted in this report (because this number excludes records thought to pertain to returning individuals treated in previous reports, it may be zero). Two asterisks (**) after the species' total indicate that the number of accepted records refers only to a restricted review period or includes records accepted for statistical purposes only; see Roberson (1986) for more information.

When individual birds return to a location after a lengthy or seasonal absence, each occurrence is reviewed under a separate record number, and Committee members indicate whether or not they believe the bird is the same as one reviewed previously. Such decisions follow the opinion of the majority of members and, if a bird is considered a returning individual, the total number of individuals remains unchanged.

Although the CBRC does not formally review the age, sex, or subspecies of each bird, information on these subjects is often provided during the review process, and in some cases a strong majority or consensus is achieved. We report much of this information; the diagnosis of age, sex or subspecies is the authors' opinion based on the evidence in the files and Committee members'

comments. We use the terms "juvenal" (restricted to a bird in *complete* juvenal plumage, usually in summer), "first-fall," "first-spring," "first-year" (from hatching through May of the bird's second calendar year), "second-spring," etc., and "adult" (a bird in definitive plumage). To avoid ambiguity we use the terms "one-year-old," "two-year-old," etc., in lieu of "first-summer," "second-summer," etc. for birds observed from June through August. We also sometimes use age/plumage terms from Humphrey and Parkes (1959) (e.g., "first alternate plumage"), when the bird's age and the plumage state are both known and important information regarding the record.

The CBRC uses standard abbreviations for California counties; those used in this report are BUT, Butte; DN, Del Norte; HUM, Humboldt; IMP, Imperial; INY, Inyo; KER, Kern; LAS, Lassen; LA, Los Angeles; MRN, Marin; MEN, Mendocino; MER, Merced; MOD, Modoc; MNO, Mono; MTY, Monterey; ORA, Orange; PLU, Plumas; RIV, Riverside; SAC, Sacramento; SBT, San Benito; SBE, San Bernardino; SD, San Diego; SF, San Francisco; SLO, San Luis Obispo; SM, San Mateo; SBA, Santa Barbara; SCL, Santa Clara; SCZ, Santa Cruz; SAC, Sacramento; SIS, Siskiyou; SOL, Solano; SON, Sonoma; TRI, Trinity; TUL, Tulare; VEN, Ventura; and YUB, Yuba. A list of county abbreviations for all 58 California counties is available on the WFO–CBRC web site and in Langham (1991). Other abbreviations used: Co., county; I., island; Ft., fort; L., lake; Mt., mountain; n. miles, nautical miles; N.W.R., national wildlife refuge; Pt., point; R., river; Rd., road, U.C., University of California.

Museum collections housing specimens cited in this report, allowing access to Committee members for research, or otherwise cited, are the California Academy of Sciences, San Francisco (CAS); Humboldt State University Wildlife Museum, Arcata (HSUWM); Museum of Vertebrate Zoology, U. C. Berkeley (MVZ); Natural History Museum of Los Angeles County, Los Angeles (LACM); San Diego Natural History Museum, San Diego (SDNHM); Santa Cruz Museum of Natural History (SCMNH); U. C. Santa Cruz (UCSC), and the Western Foundation of Vertebrate Zoology, Camarillo (WFVZ).

RECORDS ACCEPTED

EMPEROR GOOSE *Chen canagica* (88, 1). One at Elkhorn Slough, MTY, 29 Dec 2002–7 Jan 2003 (YG, CT; BH†; 2003-047) was the sixth recorded in the county and the first since 1978 (Roberson 2002). A photograph was published in *N. Am. Birds* 57:287.

TRUMPETER SWAN *Cygnus buccinator* (59, 7). Two were at Marysville, YUB, 18 Dec 2001 (AE; 2002-055). Three adults were at Modoc N.W.R., MOD, 8 Feb–7 Mar 2003 (FT†, DS; AD, AEK; 2003-026). A first-spring bird was at this same location 11 Mar 2003 (TMcG, MSanM; 2003-043), while another first-spring bird was at Lower Klamath N.W.R., SIS, 12 Mar 2003 (MSanM, TMcG; 2003-044).

FALCATED DUCK *Anas falcata* (1, 1). A male at Honey Lake Wildlife Area, LAS, 19 Mar–*9 Apr* 2002 (JCS; BDu, NF, LL‡, GMcC, JM, MMR, BEW†; 2002-049) and published in *N. Am Birds* 56:383 (Figure 1) and returning 2 Jan–11 Mar 2003 (BMS; TMcG, MSanM; 2003-041) represents the first accepted record for California. Previously this species was on the supplemental list on the basis of a record from Upper Newport Bay, ORA, 2 Jan–21 Feb 1969 (Roberson 1993). There is also a

record from Golden Gate Park, San Francisco, 5 Apr–21 May 1953 (1986-458) that was not accepted because no good descriptions were submitted to the Committee, even though the bird was apparently seen by a number of observers (Hedgepeth 1954). Roberson (1993) erroneously listed this record as identification accepted but origin questionable. All members were concerned about the natural occurrence of the Honey Lake Falcated Duck, but the fact that it migrated and returned for a second year was enough to convince the required eight members to support the record. The two dissenting voters were concerned by the availability of this species from waterfowl breeders, as well as the weak pattern of records south of Alaska. Although some previous records from south of Alaska (as from Maryland, Virginia, and North Carolina) have been considered to pertain to escapees (Peterjohn and Davis 1996, AOU 1998), six additional Pacific coast records have been accepted by state and provincial records committees. Three of these are from Washington: one shot at Willapa Bay, Pacific Co., 3 Jan 1979, one seen near Sequim, Clallam Co., 3 Jul 1993, and another seen on the Samish Flats, Skagit Co., 21 Feb–26 Mar 2002 (Wahl et al. 2005). The lone Oregon record is from Fern Ridge Reservoir, Lane Co., 14 Feb–14 Mar 2004 (*N. Am. Birds* 58:273, 58:423. This bird was reported nearby during the winter of 2004–05 (J. L. Dunn pers. comm.). The two accepted records from British Columbia comprise one from Swan Lake 5 Apr 1932 (Campbell et al. 2001) and one from Tofino, Vancouver I., April 1994, returning for the two successive winters (Patterson 1994).

KING EIDER *Somateria spectabilis* (36, 1). A first-winter bird was offshore from Lincoln Park, SF, 13 Dec 2003 (HCo, ME†, ASH; 2003-196).

YELLOW-BILLED LOON *Gavia adamsii* (71, 1). An adult in alternate plumage flying north was observed from the Newport Pier, Newport Beach, ORA, 26 Apr 2003 (BED; 2003-069). Most California records of the Yellow-billed Loon are of first-year birds, so an adult is noteworthy, but not unprecedented in southern California; the first record for Los Angeles Co. was also of a northbound adult (CBRC 1980-088) (Luther 1980). There are only seven accepted records of this species for southern California, and this is the first for Orange Co. See also records not accepted, identification not established.

SHY ALBATROSS *Thalassarche cauta* (3, 0). One reported by the captain of a chartered fishing boat at 38° 27' N, 123° 35' W, SON, 25 Sep 1999 (VO fide AD; 1999-139A) was considered to be the same individual recorded 24 Aug 1999 off Mendocino Co. (1999-139) (Rogers and Jaramillo 2002). The captain's familiarity with the Laysan Albatross (*Phoebastria immutabilis*) and the fact he had seen the same Shy Albatross a month earlier while running a birding charter convinced nine members to endorse the record. Cole (2000) discussed the 24 Aug 1999 record in detail, including identification to subspecies. Different Shy Albatrosses were recorded in California each year from 1999 and 2001, but none has been reported since.

SHORT-TAILED ALBATROSS *Phoebastria albatrus* (12**, 1). One in its first or second spring was photographed following a trawler and sitting on the water with a group of Black-footed Albatrosses (*P. nigripes*) around 40° 41.28′ N, 124° 39.23′ W, west of Humboldt Bay, HUM, 6 Apr 2003 (TP†; 2003-066). All California records since 1900 have been of first- or second-year birds. No seasonal pattern is apparent, as the 12 accepted records are widely scattered among seven months. The Committee reviews all California records of the Short-tailed Albatross since 1900. As the species continues to recover from near extinction in the mid-20th century more frequent reports from California should be expected. See also records not accepted, identification not established.

MOTTLED PETREL *Pterodroma inexpectata* (54, 1). One crash-landed in view

of observers on the south spit of Humboldt Bay, HUM, *1* Feb 2003 (not 3 Feb as reported in *N. Am. Birds* 57:252) (CW; EE, TD†; #HSU 8644; 2003-024). It later died and is now a life mount at Humboldt State University. Three quarters of California's Mottled Petrel records fall between November and February.

CORY'S SHEARWATER *Calonectris diomedea* (1, 1). One with a mixed flock of several thousand shearwaters over Bodega Canyon (38° 10.3′ N; 123° 36.1′ W), SON, 9 Aug 2003 (DLSh†; DCD, SNGH, CL, LL‡, TMcK; 2003-094) (Figure 2) was the first for California and the entire North Pacific. One observer estimated the composition of the flock to be roughly 94% Sooty (*Puffinus griseus*), 5% Pink-footed (*P. creatopus*), and 1% Buller's Shearwaters (*P. bulleri*). This flock was along a steep temperature gradient from 60.4° F to between 57° and 58° F. In the Atlantic, Cory's Shearwater relies for feeding on such temperature gradients more than do shearwaters of the genus *Puffinus* in part because it is not able to dive as deeply for prey (Haney and McGillivray 1985). The Cory's Shearwater most closely resembled a Pink-footed Shearwater but was 10% larger with a more massive head. When on the water it was distinguishable by its white flanks, white undertail coverts, and lighter grayish-brown head and neck, as well as its dark-tipped yellow bill. In flight (lumbering) the pure white underwings were also noted. There is only one other record from the Pacific, of a beached specimen of the subspecies *C. d. borealis* from Foxton on New Zealand's North I. in Jan 1934 (Marchant and Higgins 1990).

Three subspecies of Cory's Shearwater have been recognized historically, though Sangster et al. (1988) and Snow and Perrins 1998) treated the smallest subspecies (*C. d. edwardsii*) as a full species, the Cape Verde Shearwater. The AOU has yet to recognize this treatment, but a photograph of an apparent Cape Verde Shearwater off North Carolina 15 Aug 2004 (Patteson and Armistead 2004) may prompt it to review this matter. The Cape Verde Shearwater breeds on the Cape Verde Is., but its distribution away from the breeding grounds is poorly known (Patteson and Armistead 2004). Distinguishing the Cape Verde from the other subspecies of Cory's is straightforward and described by Porter et al. (1997) and Patteson and Armistead (2004). On the basis of its large yellowish bill, large size, lack of grayish tones in the brown dorsal coloration, and lack of white on the uppertail coverts, the Cory's Shearwater in California was certainly not *C. d. edwardsii*. Sangster et al. (1988) also recommended elevating the remaining two subspecies to full species status, although this view has its opponents (Wink et al. 1993, Heidrich et al. 1996). The two additional subspecies are *C. d. diomedea* (Scopoli's Shearwater), which breeds on Mediterranean islands and winters as far south as South Africa and may enter the Indian Ocean (Marchant and Higgins 1990), and *C. d. borealis* (Cory's Shearwater), which breeds primarily in the Azores, as well as at Madeira, the Salvages, and the Canary Islands, and winters off South America with substantial numbers reaching the southwest Indian Ocean east of 30° E (Marchant and Higgins 1990).

Nominate *C. d. borealis* is the most common subspecies off eastern North America, but observations of *Calonectris* shearwaters off North Carolina in spring have established that Scopoli's Shearwater is regular (S. N. G. Howell pers. comm., McGrath pers obs.). Levine (1998) reported five specimens of *C. d. diomedea* from New York, and other eastern museums also contain specimens of this subspecies (Howell pers. comm.) Criteria for identifying these subspecies at sea were discussed by Gutiérrez (1998). The most objective difference is the pattern and extensiveness of black on the underside of the primaries. In the nominate subspecies of Cory's Shearwater the primaries are dark, and the contrast with the white coverts creates an even separation between the dark and light areas of the underwing. In Scopoli's Shearwater the inner webs of the outer primaries are extensively white, creating a more angled pattern to the underwing. Cory's Shearwaters also average larger, darker headed, heavier billed, and broader winged, but these characters are often difficult to assess at sea and are best used as supporting characters.

Figure 1. Male Falcated Duck (*Anas falcata*) at Honey Lake Wildlife Area, Lassen County, photographed 21 March 2002. This bird's return in two consecutive years, implying migration, prompted the CBRC to add the Falcated Duck to the main list of California birds.

Photo by Bruce Webb

The Cory's Shearwater in California showed the extensively dark undersides to the primaries consistent with *C. d. borealis*. In the South Atlantic Ocean, Cory's Shearwaters have reached Gough I. and have been recorded as far south as 48° S off Argentina but typically range south only to 39° S (Marchant and Higgins 1990). This species' preference for warmer waters, its limited southerly distribution, and the presence of large numbers in the Indian Ocean suggest that this species likely came to California via the Indian Ocean rather than around Cape Horn of South America. Two members commented that the bird might also have crossed the Isthmus of Panama.

GREATER SHEARWATER *Puffinus gravis* (4, 1). One seen on Monterey Bay, MTY, 24 Feb 1979 (JLD, FF, KLG, SGu, BS; 1979-017A) was originally accepted by the Committee as California's first record (Luther et al. 1983). It was later re-reviewed and not accepted because of the lack of subsequent records and the observers' failure to eliminate species like the Juan Fernandez Petrel (*Pterodroma externa*) specifically (Erickson and Terrill 1996). Subsequently, the Greater Shearwater has been recorded in California three times, one of these in January (Garrett and Wilson 2003), as well as once each in Alaska (Pearce 2002) and Washington (Wahl et al. 2005). On the basis of this emerging pattern of occurrence, the Committee decided to review this record once again, and after two rounds, nine members voted to accept, making it, once again, the first accepted record from California. The dissenting voter continued to believe that the documentation did not conclusively eliminate other species. The Committee is currently reviewing records from Monterey Bay 12 Oct 2003 and the Cordell Bank 29 Aug 2004.

MANX SHEARWATER *Puffinus puffinus* (79, 4). One was seen from Capitola Beach, SCZ, 24 Sep 2001 (DLS; 2002-005). Another was observed from shore off

Figure 2. Cory's Shearwater (*Calonectris diomedea*), photographed 9 August 2003 over Bodega Canyon, off Sonoma County. These photos support the first record of this primarily Atlantic species in the North Pacific Ocean.

Photo by Debra Shearwater

Pt. Vicente, LA, 17 Mar 2003 (KGL; 2003-077) for a fourth county record. A dead bird was found by a volunteer for the Gulf of Farallones National Marine Sanctuary at Thornton Beach, SM, 7 Oct 2001 (RS†; 2003-078). The specimen, which would have been the first for California, was unfortunately not retained. One was seen 2–3 miles west of Oxnard Harbor, VEN, 25 Oct 2003 (TMcG; JF; 2003-179). See also records not accepted, identification not established.

LITTLE SHEARWATER *Puffinus assimilis* (1, 1). One at 36° 37.0′N, 122° 0.14′W off Pt. Joe, MTY, 29 Oct 2003 (BA‡, DCD, SK, NM, PP, DLSh†; 2003-149) (Figure 3) was the first for California. A photograph of this bird was also published in *N. Am. Birds* 58:137. The Manx Shearwater was eliminated by the small size and bill, white lores, more rounded wings with white outer webs on the undersides of the primaries (see Cramp and Simmons 1977), and bluish-gray legs. Audubon's Shearwaters (*P. lherminieri*) are long tailed, and most subspecies have dark undertail coverts, in contrast to the pure white undertail coverts and short, wide tail of the Little Shearwater. Audubon's Shearwater also lacks the white outer webs on the undersides of the primaries. In flight the Little Shearwater has a very direct flight with little banking that can look almost like that of an alcid (Cramp and Simmons 1977), flight characteristics both specifically noted on the Monterey bird. Two unsubstantiated sight reports from Alaska (Gibson et al. 2003) and one photographed near Midway I. (P. Pyle pers. comm.) are the only others reported from the northern Pacific. A specimen reportedly of the Little Shearwater from Midway (Clapp and Woodward 1968) shows characteristics of Audubon's Shearwater (P. Pyle pers. comm.). Austin et al. (2004) revised the taxonomy of both the Little and Audubon's Shearwaters primarily on the basis of molecular biology. Changes relevant to this discussion include the reassignment of two Atlantic subspecies of the Little Shearwater, *P. a. baroli* and *P. a. boydi,* to Audubon's Shearwater and reassignment of *P. a. myrtae* from Rapa I. in the Austral Is., French Polynesia, to Townsend's/Newell's Shearwater (*P. auricularis*). Some experts find the reassignment of *P. a. myrtae* and *P. a. baroli* controversial (P. Pyle pers. comm.), suggesting that further work on this group is required. Should the AOU eventually adopt the classification proposed by Austin et al. (2004), all of North America's Atlantic Ocean records of the Little Shearwater would pertain to Audubon's Shearwater, and this California

Figure 3. Little Shearwater (*Puffinus assimilis*), photographed 29 October 2003 off Point Joe, Monterey County. These photos support the first record of this largely Southern Hemisphere species for California and the second well-supported record for the North Pacific Ocean.

Photo by Debra Shearwater

record would likely be reviewed again to determine if it could be separated conclusively from both Audubon's and Townsend's/Newell's Shearwaters under the new taxonomy. The only specimen records of the Little Shearwater for North America involve beach-cast carcasses of *P. a. baroli* from Sullivan's I., South Carolina, Aug 1883 (Post and Gauthreaux 1989) and Sable I., Nova Scotia, 1 Sep 1896 (Dwight 1897). There are also two sight records, of three birds well studied about 45 n. miles southwest of Sable I. 23–24 2003 Sep (*N. Am. Birds* 58:31) and one less certain record from Oregon Inlet, North Carolina, 28 Dec 1984 (Am. Birds 39:157).

RED-TAILED TROPICBIRD *Phaethon rubricauda* (22, 2). One probable second-fall bird seen flying around Southeast Farallon I., SF, 29 Sep 2003 (PP, JC, KNN†; 2003-137) was the third to be recorded from the island but only the sixth for northern California. Another was seen approximately 200 n. miles sw. of San Clemente I., LA, 6 Sep 2003 (MG; TMcG, CRo; 2003-170).

MASKED BOOBY *Sula dactylatra* (12, 1). One second-winter individual was on Bird Rock, San Clemente I., LA, 17 Jan–29 Mar 2003 (RSAK, BLS†; 2003-065), returning there 10 Aug–8 Oct 2003 (BLS†; RSAK; 2003-128).

BLUE-FOOTED BOOBY *Sula nebouxii* (81, 1). One seen from West Cove Pt., San Clemente I., LA, 17 Nov 2002 (BLS; 2002-203) was the first for California since 1998 (Erickson and Hamilton 2001) and the first along the California coast since 1990 (McCaskie and San Miguel 1999), although there is a recent record for coastal Oregon: 7–9 Oct 2002 (Marshall et al. 2003). A record for Washington (23 Sep 1935, Jewett et al. 1953) is the only other one north of California. This species occurred historically in numbers at the Salton Sea during sporadic influxes (McCaskie 1970). Years or decades may pass between these events. Numbers of Blue-footed Boobies in double digits have not been recorded in California since 1977.

BROWN BOOBY *Sula leucogaster* (80, 6). A second-winter female at Princeton Harbor, SM, 2 Jan–15 Mar 2003 (RST; KMB, LWC†, ME, RFi, NF, JFH, AEK, LL‡, RWL, CAM, JM†, DSi; 2003-012) was judged by a majority of Committee members

Figure 4. Glossy Ibis (*Plegadis falcinellus*), photographed 9 July 2003 near Calipatria, Imperial County, constituting the sixth accepted record for California.

Photo by Kenneth Z. Kurland

to be the same bird reported from Southeast Farallon I. the previous fall (2003-019; Cole and McCaskie 2004). A photograph was published in *N. Am. Birds* 58:142. An adult female found dead 11 miles east of Calexico, IMP, 17 Aug 2003 (KLG, KCM†; #LACM 112416; 2003-095) likely died sometime in early August. An adult female was seen flying south from Pt. Pedernales, Vandenberg Air Force Base, SBA, 4 Jun 2003 (AB; 2003-097). Another adult was at Southeast Farallon I., SF, 11 Aug 2003 (MR; 2003-100). An adult 5.5 n. miles offshore at 39° 51.450′ N; 124° 02.456′ W, MEN, 21 Sep 2003 (RST; DLS†, CV, JW; 2003-140) was the first from waters off that county and the northernmost recorded in California. There is one record for Oregon (3 Oct 1998, Marshall et al. 2003) and another from Washington (Wahl et al. 2005). First-fall birds were on the e. end of Anacapa I., VEN, 25 Oct 2003 (TMcG; JF; 2003-180; photo in *N. Am. Birds* 58:142) and on China Pt., San Clemente I., LA, 1–3 Nov 2003 (BLS†; 2004g-011). Cole and McCaskie (2004) discussed the increase in records of Brown Booby along the coast of California.

RED-FOOTED BOOBY *Sula sula* (15, 1). One second-fall individual came aboard the research vessel *Velero IV* near Anacapa I, VEN, 17–20 Oct 2003 (CR†; 2003-160). The bird remained on board for four days. Six of California's records were in 1987; typically this species is recorded only once every three to four years. The last record was off San Diego, 14 Oct 2000 (McKee and Erickson 2002).

ANHINGA *Anhinga anhinga* (5, 2). An adult male in alternate plumage at Ramer L., IMP, 5 Apr–12 Jun 2003 (KLG; HDD†, JF, PAG, GMcC, JM†, DN†, GW†; 2003-035) was a county first and the first for California since 1984. This bird's return to Finney/Ramer lakes 19 Mar–6 May 2004 will be discussed in a future report (*N. Am. Birds* 58:433). Remarkably, a second-fall male at Fig Lagoon, 2 mi. sw. of Seeley, IMP, 8 Nov 2003–18 Jan 2004 (GMcC, JCS; MBi, KZK†, CL, LL‡, CM, MSanM; 2003-159) gave Imperial Co. its second record in less than five months.

Figure 5. Crested Caracara (*Caracara cheriway*), photographed 11 August 2002 at Marina, Monterey County. Eight sightings of probably four individual Crested Caracaras 2001–03 prompted the CBRC to add the species to the main list of California birds.

Photo by Scott Hein

TRICOLORED HERON *Egretta tricolor* (42**, 4). An adult at West Pond near Imperial Dam, IMP, 25 Mar 2003 (DEQ; 2003-037) was the first accepted for Imperial Co. away from the Salton Sink. Another adult was in s. San Diego Bay, SD, 15 Jan 1999 (MRa†; 2003-080). An adult and a one-year-old bird were seen together near Red Hill at the s. end of the Salton Sea, IMP, 9 Jul 2003, with the adult continuing through 17 Aug 2003 (AEK; MJI, GMcC; 2003-084). The Committee reviews Tricolored Heron records from 1990 onward.

GLOSSY IBIS *Plegadis falcinellus* (6, 2). An adult near Calipatria, IMP, *1–2 Jul 2000* (PAG, GMcC; CAM; 2000-109) took three rounds to gain acceptance, primarily because of concerns about the presence of one or more Glossy Ibises and on what dates they may have occurred. An adult with red tarsal joints was reported near this location on 27 May 2000, and the 1–2 July sightings, as well as sightings from 9 and 15 Jul, and 8 Aug were combined as one record and considered to be the same individual. After a thorough review and extensive discussions at the 2004 annual meeting, the Committee voted to limit the accepted date range to 1–2 Jul. More recently, an adult was with a group of White-faced Ibises (*P. chihi*) in a flooded field at the intersection of English and Sinclair roads, near Calipatria, IMP, 9 Jul 2003 (JLD†; KZK†, GMcC, MSanM; 2003-086) (Figure 4). Patten and Lasley (2000) and Arterburn and Grzybowski (2003) discussed the possibility of hybrid Glossy × White-faced Ibises. Observers should consider the possibility of hybrids carefully when reporting a Glossy Ibis in California. A record from Los Angeles Co., which may pertain to a hybrid, and another record for Imperial Co., which may be considered the same bird as 2000-109, are currently being evaluated by Committee. See also records not accepted, identification not established.

ROSEATE SPOONBILL *Platalea ajaja* (15**, 2). Two at Goleta Slough, SBA, 30 Jul–14 Sep 1973 (BSc†; 2004-037) were considered to be the same as the two at Pt. Mugu, VEN, 4–20 Jul 1973 (Webster et al. 1980). As noted in the introduction, the Committee now reviews Roseate Spoonbill records for all years, but the totals above exclude records 1974–78, when this species was not on the review list.

BLACK VULTURE *Coragyps atratus* (3, 1). California's third was at Arcata, HUM, 8–9 Oct 2003 (DFi; RF†, KeR; 2003-132). Remarkably, it was at the same location as California's second, 19 Sep 1993–9 Feb 1994 (McCaskie and San Miguel 1999).

MISSISSIPPI KITE *Ictinia mississippiensis* (33, 3). One in its first spring was soaring over Claremont, LA, 26 May 2003 (KW; 2003-064). One was at Furnace Creek Ranch, INY, 23 May 2003 (RB, JLD, CHo†; 2003-075). Furnace Creek Ranch has hosted one-third of all California's accepted Mississippi Kites. One in its first fall seen from the hawkwatch at the Marin Headlands, MRN, 28 Oct 2003 (SB, RFi; HBr, LC, AF, SStu; 2003-150) was the second at this location and for coastal northern California.

*ZONE-TAILED HAWK *Buteo albonotatus* (67, 1). One collected at Chula Vista, SD, in April or May 1945 (SCMNH†; 2004-028) was at first thought to be a Short-tailed Hawk (*B. brachyurus*), then labeled a melanistic Red-tailed Hawk (*B. jamaicensis*) (Chester E. Bell pers. comm. to GMcC). A review of the life mount at the Santa Cruz Museum of Natural History confirmed the identification as a Zone-tailed Hawk.

CRESTED CARACARA *Caracara cheriway* (4, 4). This species was elevated from the supplemental list to the main list on the basis of eight accepted records from 20 Oct 2001 to 5 Jan 2003. The Committee judged several of the records to pertain to the same individual, for a total of four separate birds. The first was in Long Beach,

Figure 6. Yellow Rail (*Coturnicops noveboracensis*) found dead at Harkins Slough near Santa Cruz, 25 October 2003.

Photo by Bev Brock

LA, 20 Oct 2001 (KGL; 2002-061). A first-spring bird at Goleta, SBA, 30 Apr 2002 (PG; 2002-147) was judged to be the same bird as one at Vandenberg Air Force Base, SBA, 14–23 Jul 2002 (BHi‡; DC; 2002-148), near Pt. Mugu, VEN, 8 Aug 2002 (AC, JC; 2002-192), and near Saticoy, VEN, 9 Dec 2002–*5 Jan 2003* (SH; TE, JG†, CAM; TMcG, MSanM, SSo, WW; 2002-209). Another was at the San Jacinto Wildlife Area, near Lakeview, RIV, 4 Jul 2002 (TS†; 2002-130). A two-year-old bird at Marina, MTY, 11–13 Aug 2002 (RS†; SH†, BH†, LL‡; 2002-154) (Figure 5) was considered to be the same bird as one 2 miles n. of Davenport, SCZ, 21–27 Sep 2002 (MBr, CL†, JM, DEQ, DR†, KR†, MSc†, DLS, DVP, RW; 2002-161). The species had not been placed on the state list previously because of concerns over natural occurrence. After three rounds of circulation and further discussion at its annual meeting in 2005, eight members endorsed the natural occurrence of the Crested Caracara, noting that the species is little known in captivity, shows a pattern of dispersal during the nonbreeding season in Arizona, has been expanding its range in Texas, and appeared widely across the country in 2002 (Brinkley and Lehman 2002). The fact that some of the records pertained to immature birds was another point in support of natural vagrancy. The two dissenting voters argued that the pattern of vagrancy in California was counterintuitive, with no apparent seasonality, and that the records were concentrated along the coast from Los Angeles north to Santa Cruz, rather than in the Imperial Valley and along the Colorado R. Furthermore, the pattern of vagrancy in Arizona is not very strong, and there are several cases of this species' known (e.g., Virginia, Ned Brinkley in litt.) or presumed escape from captivity (e.g., records from Massachusetts, Nova Scotia, and elsewhere in the East). Five records, one each from Imperial, Humboldt, Mendocino, Santa Barbara, and Sonoma counties,

Figure 7. Little Gull (*Larus minutus*), photographed 1 January 2004 at Prado Regional Park, San Bernardino County.

Photo by Larry Sansone

Figure 8. This Magnificent Hummingbird (*Eugenes fulgens*) in San Diego 11 October–29 November 2003 was the first identified conclusively in California.

Photo by Matt Sadowski

Figure 9. This Yellow-bellied Flycatcher (*Empidonax flaviventris*) was at Point Loma, San Diego, 28 September–1 October 2003.

Photo by Matt Sadowski

are currently under review by the Committee. Some of these may pertain to the same individual. Readers are encouraged to submit any information on the status of this species in captivity in California and elsewhere. Some records previously not accepted because of questions of origin may be reevaluated. See also records not accepted, identification not established, and records not accepted, identification accepted but natural occurrence questionable.

GYRFALCON *Falco rusticolus* (10, 2). One juvenile of the gray morph along Flannery Rd., SOL, 1 Dec 2001(SA, SiR†; 2001-210) was the second Gyrfalcon recorded in Solano Co. One first seen at Eel R. Wildlife Area, HUM, was resighted at various locations around Humboldt Bay 16 Oct–3 Nov 2003 (DFi, KeR; 2003-139) and was the first recorded in Humboldt Co.

*YELLOW RAIL *Coturnicops noveboracensis* (78, 2). One vocalizing at Cowhead Slough ne. of Ft. Bidwell, MOD, 14-28 Jun 2003 (JCS§, FT; MF, AH 2003-083) was considered a returning bird, since one was present there 27 May–24 June 2002 (Cole and McCaskie 2004). Although one observer reported hearing two birds at this location, the Committee reviewed and accepted only one. Another was heard near the city of Mt. Shasta, SIS, 6 Jun–12 Jul 2003 (JCS, JEH; MMR; 2003-092). An adult male was found dead at Harkins Slough near Santa Cruz, SCZ, 25 Oct 2003 (BeB; #UCSC A-641; 2003-146) (Figure 6).

The Committee provisionally accepted reports of 17 specimens listed by Grinnell and Miller (1944) because the specimens were presumed lost (Dunn 1988). Pyle recently located at CAS eight of the specimens, which the Committee reviewed and formally accepted. One was a first-spring male collected by Edward Garner at Quincy, PLU, 15 Apr 1889 (PP†; #CAS 73833; 2004-017). Grinnell and Miller (1944) listed

Figure 10. This Blue-headed Vireo (*Vireo solitarius*) banded on Southeast Farallon I. 29 September 1985 is one of 19 accepted by the Committee in this report. It shows the sharp contrast between the bluish-gray head and clean white throat, a mark critical to distinguishing this species from a bright Cassin's Vireo (*V. cassinii*).

Photo by Peter Pyle

the date as 16 April. The other seven specimens were collected by Chase Littlejohn at Redwood City, SM, as follows:

Male, adult, 2 Jan 1893 (PP†; #CAS 73835; 2004-018).
Female, adult, 23 Dec 1894 (PP†; #CAS 73836; 2004-019).
Male, adult, 21 Dec 1896 (PP†; #CAS 73834; 2004-020).
Female, adult, 22 Jan 1897 (PP†; #CAS 73838; 2004-021).
Male, first-fall, 24 Oct 1897 (PP†; #CAS 73839; 2004-022).
Female, first-fall, 17 Nov 1911 (PP†; #CAS 73837; 2004-023).
Female, adult, 4 Jan 1912 (PP†; #CAS 73840; 2004-024).
The Committee reviews Yellow Rail records through 2003.

LESSER SAND-PLOVER *Charadrius mongolus* (9, 1). One in its first fall at Abbott's Lagoon, MRN, 22 Oct 2003 (SNGH; 2003-164) was well described, and the observer eliminated other possible species such as the Greater Sand-Plover (*C. leschenaultii*), which has occurred once in California (Abbott et al. 2001, Garrett and Wilson 2003). This record represented a significant extension of the late date in fall, as the next latest record for the Lesser Sand-Plover California is 3 October (Erickson and Hamilton 2001).

UPLAND SANDPIPER *Bartramia longicauda* (22, 1). Tertials and axillar feathers recovered from a Peregrine Falcon (*Falco peregrinus*) eyrie near Burnt Ranch, TRI, 5 Jun 1992 (fide JS†; 1993-002) provided a first record of the Upland Sandpiper for Trinity Co. The Committee analyzed photographs of the feathers to reach its decision. Pyle compared the feathers to specimens at CAS and found them to match the Upland Sandpiper. Other possible species such as the Little Curlew (*Numenius minutus*) and other Eurasian species of *Numenius* and *Limosa* were considered and eliminated.

HUDSONIAN GODWIT *Limosa haemastica* (21, 3). One in its first fall was at New Chicago Marsh, Alviso, SCL, 27 Aug–6 Sep 2003 (DM; LWC†, ME†, RFe, CL, LL‡, MMa, JM, JMy, MMR, DSi, DVP†; 2003-112). A photograph was published in *N. Am Birds* 58:140. It was joined by another in its first fall 30 Aug–6 Sep 2003 (RFe, MMa, JMy†, MMR, DSi, DVP†; 2003-114). All previous California records were of single birds. Another individual in its first fall was at Lake Talawa, DN, 18 Oct 2003 (RF, KeR; 2003-143).

WHITE-RUMPED SANDPIPER *Calidris fuscicollis* (19, 3). The three spring records in 2003 were the most ever in California during a single season. One bird was at the north end of Crowley Lake, MNO, *24* May 2003 (not 26 May as reported in *N. Am . Birds* 57:399) (REM; 2003-093). The second was at the historic "I" ranch on Pt. Reyes, MRN, 31 May–*3* Jun 2003 (CL, LL‡; KB, RS†; 2003-059). The third was at Bolsa Chica, ORA, 1 Jun 2003 (PAG, SSo; 2003-060). All of California's spring records of the White-rumped Sandpiper fall between 17 May and 12 Jun, with most in the last week of May or first week of June.

CURLEW SANDPIPER *Calidris ferruginea* (32, 1). One in its first spring at Merced N.W.R., MER, 25–26 May 2003 (AJ†, KVV; 2003-079) was the fifth recorded inland in California in spring. See also records not accepted, identification not established.

*BUFF-BREASTED SANDPIPER *Tryngites subruficollis* (121, 1). One in its first fall was at Morro Bay, SLO, 10 Sep 1988 (RZ; 2004-007). The Committee reviews Buff-breasted Sandpiper records through 1991.

LITTLE GULL *Larus minutus* (86, 7). Three observed in the 20th century were submitted to the Committee and accepted in 2004: one in its first spring at Yorba Linda Regional Park, ORA, 25 Mar 1995 (BED; 2004-001), an adult at the New Chicago Marsh, Alviso, SCL, 31 Dec 1998 (SBT; 2004-026), and one in its first spring at the Santa Clara Water Pollution Control Plant in Alviso, SCL, 28 Apr 1999

(SBT; 2004-025). One in its first fall at Long Pt. on the Palos Verdes Peninsula, LA, 24 Nov 2002 (MSanM; 2002-199) was the first for Los Angeles Co. since 1995. Two adults were at Prado Regional Park, SBE, the first 21 Dec 2003–16 Feb 2004 (DF†, RF†, NF, MJI†, HK, CAM, GMcC, DWN†, MS†, LS†; 2003-198; photo in *N. Am. Birds* 58:282), and the second 26 Dec 2003–6 Jan 2004 (AH, MSanM, LS†; 2004-033) (Figure 7) . These are the first records for San Bernardino Co. One adult at L. Mathews, RIV, 15 Nov–28 Dec 2003 (KFC; 2004-042) was only about 10 miles from Prado, but the Committee accepted it as a different individual. See also records not accepted, identification not established.

BLACK-HEADED GULL *Larus ridibundus* (22, 2). It took the Committee four rounds to conclude that an adult at Devereux Slough, Goleta, SBA, 10–31 Dec 2000 (GWe; DVP; 2001-001) was likely not the bird that had been returning to nearby Santa Barbara for six winters from 1992 through 1997 (Erickson and Hamilton 2001). Eventually all members agreed that the three-year period between sightings was sufficient to treat this individual as different. A one-year-old bird at Teal Pt., L. Earl, DN, 2–16 Aug 2003 (MJI; MF, KeR; 2003-124) was the first for that county since 1980 and only the third recorded in California in summer.

LESSER BLACK-BACKED GULL *Larus fuscus* (23, 3). An adult at Elkhorn Slough, Moss Landing, MTY, 9 Jan 2003 (TE; 2003-014) was only the second for Monterey County (Roberson 2002). One in its second fall at Crowley Lake, MNO, 22–26 Oct 2003 (JLD; RB, CHo†; 2003-161) was the first on the eastern side of the Sierra Nevada, while a one-year-old bird at the Nimbus Fish Hatchery, SAC, 24 Oct–12 Dec 2003 (SNHG†; CC, EH†, DJ; 2003-201) was a first for the San Joaquin Valley region.

THICK-BILLED MURRE *Uria lomvia* (44, 2). One 5 miles west of Bear Harbor, MEN, 21 Sep 2003 (DLSh, CV, JW; 2003-003) was a first from waters off that

Figure 11. Curve-billed Thrasher (*Toxostoma curvirostre*) at Black Meadow Landing along the Colorado River, San Bernardino Co., 1 November 2003–18 March 2004.

Photo by Chuck Gordon

county. A photograph of one on the north side of Monterey Bay, SCZ, 4 Oct 2003 (RP, DLSh†; 2003-138) is in *N. Am Birds* 58:138. More than 60% of California's Thick-billed Murre records are from Monterey Bay. See also records not accepted, identification not established.

ORIENTAL TURTLE-DOVE *Streptopelia orientalis* (1, 1). One in its first fall at Bolinas, MRN, 9–31 Dec 2002 (KH‡, SNGH†, PP; 2003-036) was the first accepted for California. All ten Committee members accepted the bird's identification, but two questioned its natural occurrence. The bird's age and its appearing to be of the migratory Asian subspecies *S. o. orientalis* were factors cited by most accepting members. Although this species is uncommon in captivity and is not bred in numbers in the United States (L. W. Cole and M. M. Rogers in comments), two members felt that the risk of an escapee could not be eliminated satisfactorily. The bird was visiting a chicken coop for food, and its tail had been lost and was regrowing. The Oriental Turtle-Dove has an extensive pattern of vagrancy to Europe, and at least some records there pertain to *S. o. orientalis* (Hirschfeld 1986, Lewington et al. 1991). This species has been recorded in Alaska five times between 20 May and 26 Jul: twice at Attu, twice at or near the Pribilof Is. (A.O.U. 1998), and once from Dutch Harbor in the Aleutians (*N. Am. Birds* 49:964). One at Tofino, British Columbia, 14–25 Aug 1992 was accepted by the British Columbia Bird Records Committee (Campbell et al. 2002) but considered a possible escapee from captivity by the A.O.U. (1998). A previous California report from Furnace Creek Ranch 29 Oct 1988 was not accepted (Heindel and Garrett 1995) but is being reevaluated by the Committee.

*RUDDY GROUND-DOVE *Columbina talpacoti* (104, 3). A female at Furnace Creek Ranch, INY, 6 Oct 2002–17 Feb 2003 (JLD; RB, CHo†; 2002-193) apparently remained until 23 May 2003 (JLD; 2003-081). The record of a male at this location about the same time is still under review. Three reported from this same location 14

Figure 12. This female Pine Warbler (*Dendroica pinus*), photographed 29 December 2003, was one of two spending the winter of 2003–04 at Veterans' Park, Imperial Beach, San Diego Co.

Photo by Ed Greaves

Oct 2003, with two continuing through 11 Nov 2003 (JHo†; RB, CHo†, AH, AEK, CMcF†; 2003-157), were accepted as different birds, but the Committee's review of these individuals remains incomplete. A male was at Bishop, INY, 14 Dec 2003–13 Jan 2004 (JLD, CH†, 2003-081). The Committee reviews Ruddy Ground-Dove records through 2003.

SNOWY OWL** *Bubo scandiacus* (69, 2). The Committee reviewed photographs of two specimens from the MVZ collection. The first was of a first-fall male collected 17 Nov 1916 at Gridley, BUT (SNGH†; #MVZ 27139; 2003-202). The second was of a skeleton of a bird collected at Loleta, HUM, 2 Dec 1916 (SNGH†; #MVZ 27606; 2003-203).

BROAD-BILLED HUMMINGBIRD *Cynanthus latirostris* (62, 2). A male was at Sonoma, SON, 13–27 Nov 2003 (KB, ME†, MH, CL, LL‡, JM; 2003-162), providing a county first. A photograph of this bird was published in *N. Am. Birds* 58:139; a report of its return in May–June 2004 is under review. A first-year male banded at Big Morongo Preserve, Morongo Valley, SBE, 26 Jul 2003 (BAC; 2003-096) was exceptional for the date, as all of California's 61 other accepted records range from September to April.

MAGNIFICENT HUMMINGBIRD *Eugenes fulgens* (1, 1). An adult female at Kate O. Sessions Memorial Park, Pacific Beach, SD, 11 Oct–29 Nov 2003 (NS; MBi, KLG, PAG, MJI, GMcC, TMcG, MSanM, JM, GLR, MMR†, MS†, DSi, PU; 2003-133) was the first accepted for California (Figure 8). Another photograph was published in *N. Am. Birds* 58:176. This species has a pattern of northward dispersal in the late spring and summer, with numerous records (including some breeding) for Colorado, as well as reports from Nevada, Utah, Kansas, Wyoming, and Minnesota (Williamson 2001, Howell 2002). It also has dispersed to the southeastern United States in fall

Figure 13. Mourning Warbler (*Oporornis philadelphia*) at Point Loma, San Diego Co., 19 September 2003

Sketch by Susan E. Smith

and winter, with records from southeastern Texas, Alabama, and Georgia (Williamson 2001, Howell 2002); an adult male was photographed in Virginia 22–25 Oct 2004 (*N. Am. Birds* 58:460).

GREATER PEWEE *Contopus pertinax* (37, 1). One that vocalized frequently was in Escondido, SD, 30 Dec 1995–1 Jan 1996 (MC; KLW; 2003-090). Only eight of the previously accepted California records have been away from the coast. This species has been recorded in California only between 11 Sep and 30 Mar.

EASTERN WOOD-PEWEE *Contopus virens* (10, 1). One singing the diagnostic *pee-a-wee* song was along the American River Parkway, Sacramento, SAC, 22 Jun 2003 (JML§; GE†, KCK; 2003-085). Vocalizations may be the only reliable way to distinguish this species from the Western Wood-Pewee (*C. sordidulus*) in the field. This individual fits perfectly into the pattern of previous California occurrences: seven of nine accepted records are for June and July. See also records not accepted, identification not established.

YELLOW-BELLIED FLYCATCHER *Empidonax flaviventris* (15, 1). A well documented, vocalizing bird was at Pt. Loma, SD, 28 Sep–1 Oct 2003 (GMcC; JRB, MBi, TC, MJI, TMcG, GLR, MS†, MSanM, SES, PU; 2002-123) (Figure 9). All accepted records for California fall within the interval 3 Sep–16 Oct. See also records not accepted, identification not established.

DUSKY-CAPPED FLYCATCHER *Myiarchus tuberculifer* (64, 1). One was at Mile Square Regional Park, Fountain Valley, ORA, 9 Dec 2003–25 Apr 2004 (JEP; MJI†, GT; 2003-186). The distribution and schedule of this species in California are similar to those of the Greater Pewee (*C. pertinax*), discussed above. This species has been recorded away from the coastal slope only five times (all in Imperial and Inyo counties), and all California sightings have been between 4 Nov and 24 May.

WHITE-EYED VIREO *Vireo griseus* (47, 2). A singing male was at the Big Sur R. mouth, MTY, 20 May–17 Jun 2000 (DR; 2004-073). An adult was at Galileo Hill, KER, 30 Sep 2003 (AH; MJI, TMcG; 2003-126). Kern Co. now has seven records, more than any other county, but this was Kern's first in fall. In California the White-eyed Vireo occurs predominantly in the spring; there are only six fall records. This was the first adult recorded in the fall. See also records not accepted, identification not established.

YELLOW-THROATED VIREO *Vireo flavifrons* (95, 6). One at Banning Park, Wilmington, LA, 26 May 2003 (JF†; 2003-068) was accepted in the third round of voting after apparent inconsistencies between a sketch and photographs were resolved. One was in Burns Canyon, San Clemente I., LA, 27 May 2003 (DH; 2003-129). One was at Huntington Beach, ORA, 30 May 2003 (BED; 2003-071); the following day another was nearby at the Newport Environmental Center, Newport Beach, ORA, 31 May–2 Jun 2003 (BED; 2003-070). The record of a one-year-old bird banded and photographed at Lanphere Dunes, HUM, 7–13 Jun 2003 (EE†; 2002-063) was not accompanied by a written description but nonetheless accepted. Even if the identification of a species through photo documentation seems obvious, the CBRC prefers that photographs be accompanied by a written description because photographs may not always record all important field marks (Cole and McCaskie 2004). The sixth Yellow-throated Vireo accepted by the Committee from 2003 was at Greenwood Cemetery, SD, 11 Dec 2003–18 Jan 2004 (JOZ; MBi†, EG†, MTH, GMcC; 2003-181); it was only the third found wintering in California.

BLUE-HEADED VIREO *Vireo solitarius* (33, 20). After the AOU (1998) split the Solitary Vireo complex into three species the Committee added the Blue-headed Vireo to its review list. At its annual meeting in 2002 it decided to review and consider as many records prior to 1998 as possible. Members Rottenborn, Cole, and Rogers

assembled historical records of the Blue-headed Vireo for the Committee's review; 31 records were circulated. Nineteen records dating back to 1973 were accepted in the first round:

San Nicolas I., VEN, 30 Sep 1973 (JLD†; #SDNHM 38562; 2003-116).
Nunes Ranch, Pt. Reyes, MRN, 24 Sep 1979 (JGE; 2002-070).
Tijuana R. Valley, SD, 12 Nov 1979 (GMcC; 2002-071).
Carpenteria Creek, SBA, 22 Sep 1980 (KLG; PEL; 2002-072).
Southeast Farallon I., SF, 2 Nov 1981 (PH†; 2002-074).
Southeast Farallon I., SF, 29 Sep 1985 (PP†; 2002-076) (Figure 10).
New Willows, Point Reyes, MRN, 12–13 Sep 1986 (JML; PEL; 2002-078).
Southeast Farallon Is., SF, 23 Sep 1986 (PH, OL; 2002-079).
Point Loma, SD, 16 Jan–1 Feb 1987 (GMcC; 2002-081).
Point Loma, SD, 10 Oct 1987 (GMcC; 2002-082).
Point Loma, SD, 18 Oct 1987 (GMcC; 2002-083).
Turtle Rock Nature Center, ORA, 18 Sep 1989 (DEW; 2002-100).
Oceano, SLO, 1 Oct 1989 (GMcC; 2002-084).
Furnace Creek Ranch, INY, 23 Sep 1991 (GMcC; 2002-085).
Stinson Beach, MRN, 15 Sep 1993 (SNGH; 2002-087).
Southeast Farallon I., SF, 6 Oct 1993 (PP†; 2002-088).
Southeast Farallon I., SF, 9–13 Sep 1995 (PC; 2002-091).
San Jose, SCL, 28 Nov 1996 (SR; 2002-093).
Big Sur R. mouth, MTY, 12 Sep 1999 (CH; 2002-094).

In addition to this historical review, the Committee accepted a report from Pt. Loma, SD, 4 Oct 2003 (JOZ; MBI, GMcC, SES; 2003-127). Prior to this report only 13 of 28 records submitted were accepted. The low acceptance rate is indicative of the difficulty in distinguishing the Blue-headed from bright Cassin's Vireos (*V. cassinii*) (Heindel 1996). See also records not accepted, identification not established.

YELLOW-GREEN VIREO *Vireo flavoviridis* (82, 8). On the basis of new information, the Committee voted to endorse one at Mission Ranch, MTY, 5 Oct 1996 (BH; 1997-051) as being different from the one at the Carmel R. Mouth, MTY, 28 Sep–14 Oct 1996 (McCaskie and San Miguel 1999, Rottenborn and Morlan 2000).

The seven Yellow-green Vireos reported in fall 2003 made the strongest showing since 1998. One in its first fall was at Pt. Loma, SD, 20 Sep 2003 (DL, GMcC; MBi, 2003-120). One in a residential area on Point Loma, SD, 21 Sep 2003 (MBi; 2003-145) was accepted on the second round. Others were at Westminster Cemetery, ORA, 9–10 Oct 2003 (JEP; TMcG; 2003-166), Seagate Park, Huntington Beach, ORA, 10 Oct 2003 (JEP; 2003-177), South Coast Botanic Garden, Rolling Hills Estates, LA, 13 Oct 2003 (GH; 2003-174), and Lake Los Carneros, Goleta, SBA, 26–28 Oct 2003 (DC, WF, NL TMcG; 2003-167). One at Galileo Hill, KER, 28–30 Oct 2003 (AH; AEK, LS†, TEW; 2003-153) was only the fourth recorded in the interior, although three of them have been at this location.

WOOD THRUSH *Hylocichla mustelina* (18, 2). A one-year-old bird was at Ridgecrest, KER, 8–10 Jun 2003 (JSe; BB, DGB, AEK, KL†, MSanM, TEW; 2003-067). One at Desert Center, RIV, 19 Oct 2003 (CMcG†; DG, JG†; 2003-142) was the first recorded in that county.

CURVE-BILLED THRASHER *Toxostoma curvirostre* (16, 1). One was at Black Meadow Landing along the Colorado R., SBE, 1 Nov 2003–18 Mar 2004 (CG†; CAM, AEK, GMcC, DN†; 2004-027) (Figure 11), representing the first accepted record for San Bernardino Co. A record from this location from the fall of 2004 that may involve the same individual is currently under review. Not surprisingly, all other California records but one are from Imperial and Riverside counties. The western edge of the species' breeding range lies about 20 miles east of the Colorado River in Arizona (Rosenberg et al. 1991).

BLACK-BACKED WAGTAIL *Motacilla lugens* (13, 3). One near Woodlake, TUL, 26 Apr 2003 (JeW, JWe†; 2003-046) represented a first county record. One at Deep Springs College, INY, 10 May 2003 (RB, CHo†; 2003-049), a photograph of which was published in *N. Am. Birds* 57:432, was considered by one member to be the same bird as in record 2003-046, but a majority of the Committee judged these records to pertain to different individuals because the locations are separated by the Sierra Nevada. These records represent the first sightings of the Black-backed Wagtail inland in California. One seen sporadically for three weeks in the concrete-lined channel of the Los Angeles R., Paramount, LA, 10 Sep–3 Oct 2003 (RiB; KLG, MJI, JEP, KR†, MJSanM, MSanM; 2003-144) provided the first record for that county.

WHITE/BLACK-BACKED WAGTAIL *Motacilla alba/M. lugens* (4, 0). The report of one at the Big Sur River mouth, MTY, 28 Sep 1998 (DR†; 1998-173A) was recirculated after the publication of Alström and Mild (2003). After three rounds, eight members were still comfortable endorsing this record only to the species pair, while two accepted it as a White Wagtail (*M. alba*). First-fall White and Black-backed Wagtails pose an extremely difficult identification challenge, and not all birds are identifiable to species. Moreover, there are no criteria for identifying hybrids of these species. Sibley and Howell (1998) addressed the identification of White and Black-backed Wagtails in basic plumage. The Committee most recently established criteria for accepting species pairs as described by McKee and Erickson (2002).

SPRAGUE'S PIPIT *Anthus spragueii* (60, 10). One was at Furnace Creek Ranch, INY, 19 Oct 2003 (CMcF; 2003-187). At least five were in fields of dormant Bermuda Grass (*Cynodon dactylon*) adjacent to the Calipatria State Prison, IMP, 29–30 Nov 2003 (GMcC; MSanM; 2003-165). These birds were in the same location where 11 stayed the previous winter. Another four were near the intersection of Hwy. 111 and Sinclair Rd., IMP, 15 Dec 2003–17 Apr 2004 (GMcC; RF†, MJI, CAM, MM†, MMR,

Figure 14. This Baird's Sparrow (*Ammodramus bairdii*) at Southeast Farallon I., 28 September 2003 made only the fourth accepted record for California.

Photo by Kristie N. Nelson

BLS†; 2003-188). This species favors fields of dormant Bermuda Grass (Rosenberg et al. 1991) and appears to be a regular winter visitor in the Imperial Valley where this grass is grown commercially. A photograph of one of four near Calipatria was published in *N. Am. Birds* 58:283.

BLUE-WINGED WARBLER *Vermivora pinus* (35, 2). A male was observed briefly at Butterbredt Springs, KER, 26 May 2003 (SBT; KL, DVP; 2003-061). A male was at the Big Sur R. mouth, MTY, 26 Jun 2003 (SaH†; 2004-043).

YELLOW-THROATED WARBLER *Dendroica dominica* (101, 5). A male at Butterbredt Springs, KER, 10 May 2003 (MMcQ; 2003-039), a male at Glen Helen Regional Park, SBE, 13 May 2003 (DGu; AEK; 2003-040), one at Los Osos, SLO, 21 May 2003 (KAH; 2003-072; supported by a nicely detailed sketch), and a male at Huntington Beach, ORA, 30 May 2003 (IH; 2003-071), were all of the subspecies *albilora*. A single bird seen briefly at Pt. Loma, SD, 29–30 May 2003 (PAG; 2003-054) was of undetermined race. Although this species is most often found in California in the spring, the total of five reports between 10 and 30 May 2003 was unprecedented.

GRACE'S WARBLER *Dendroica graciae* (44, 7). The record of one at Aldrich Park, U. C. Irvine, ORA, 26 Oct 2002 (IH; DRW; 2003-213) was accepted unanimously when a second observer submitted details. One at Del Mar, SD, on 8 Jan 2003 (EAC; 2003-028) was considered the same as 2001-191 (Garrett and Wilson 2003), returning to the same locale. A pair in the forest of White Fir (*Abies concolor*) on Clark Mt., SBE, 24 May–4 Jul 2003 (MBr, DVP; SBT; 2003-056) was in an area where this species is suspected to have nested. One was at Buckhorn Campground, San Gabriel Mountains, LA, 14 Jun 2003 (JF; 2003-091). An adult female returned to Pt. Loma, SD, for its third winter and was present 11 Sep 2003–9 *Jan* 2004 (MBi†, MTH, CAM, GMcC, MMR, DVP; 2003-119). Another individual was at Pt. Loma, SD, 14 Sep 2003–9 Jan 2004 (MTH, GMcC, MS†, SBT; 2003-175). One was near Pino Alto Camp, Figueroa Mt., SBA, 5 Oct 2003 (MAH; 2003-195). One at Pt. Loma, SD, 2 Jan 2004 (MTH, GMcC, SBT; 2004-006) was considered to be a third Grace's Warbler wintering at this location. See also records not accepted, identification not established.

PINE WARBLER *Dendroica pinus* (67, 4). One at Cactus City Rest Area, Interstate 10, RIV, 21 Oct 2001 (DSC; 2001-180) was only the seventh recorded in California's interior. Two wintered at Veterans' Park, Imperial Beach, SD, 7 Dec 2003–27 Jan 2004 (MBi, EG†, MTH†, CM, GMcC, MS†; 2003-176) and 7 Dec 2003–27 Jan 2004 (MBi; MTH†, GMcC, MS†; 2003-197). Some on the Committee considered the duller of the two (2003-176) (Figure 12) to be an immature female, the brighter an adult female. One was at Morro Bay State Park, SLO, 12–14 Dec 2003 (TME; 2004-044). At least 23 of California's 67 accepted Pine Warblers stayed for 10 days or longer; many remained for months through the winter. Wintering birds have a strong preference for mature Canary Island Pines (*Pinus canariensis*), planted in abundance in coastal central and southern California. San Diego Co. accounts for 23 accepted records, far more than any other county.

*BAY-BREASTED WARBLER *Dendroica castanea* (9, 1). A single bird was at Otay Mesa, SD, 29 Sep 1973 (GMcC; 2004-047). The Committee reviews records only from 1972 to 1975. California now claims over 250 records of the Bay-breasted Warbler (Dunn and Garrett 1997).

*PROTHONOTARY WARBLER *Protonotaria citrea* (96, 1). A female was at Galileo Hill, KER, 2–3 Oct 1987 (JCW†; 1988-048). The Committee reviews records only through 1989.

WORM-EATING WARBLER *Helmitheros vermivorus* (97, 3). A singing male was

in Grapevine Canyon, Hunter Mt., INY 24–25 Jun 1995 (REW; TH; 2004-040). A singing male was at Butterbredt Springs, KER, 17–20 May 2003 (TMcG, KR, MSanM, SSo; 2003-050). One at Galileo Hill, KER, 12–28 Oct 2003 (AH, TEW; 2003-168) established the first fall record for Kern Co.

LOUISIANA WATERTHRUSH *Seiurus motacilla* (15, 1). One banded at the Big Sur R. mouth, MTY, 30 May 2003 (JGr†; DR; 2003-058) was the first recorded in Monterey Co. and in northern California away from Southeast Farallon I. A photograph was published in *N. Am. Birds* 57:400.

CONNECTICUT WARBLER *Oporornis agilis* (93, 1). A probable first-fall female banded on Southeast Farallon I., SF, 27 Sep 2003 (AB, KNN†; 2003-135) was the 50th Connecticut Warbler recorded at this location.

MOURNING WARBLER *Oporornis philadelphia* (124, 3). One was at Ridgecrest, KER, 26 May 2003 (RST; KL, DVP; 2003-062). The report of a first-fall male at Pt. Loma, SD, 19 Sep 2003 (DF, SES; 2003-122) (Figure 13) was accepted unanimously. One in its first fall was at California City, KER, 2 Oct 2003 (HCl, LS; 2003-131). See also records not accepted, identification not established.

RED-FACED WARBLER *Cardellina rubrifrons* (14, 1). A singing male at the nature center in El Dorado Park, Long Beach, LA, 10 Jun 2003 (KSG†; MSanM; 2003-074) was the first recorded in the lowlands of Los Angeles Co. Twelve of California's 14 accepted records are for spring.

SCARLET TANAGER *Piranga olivacea* (125, 6). An adult male with scarlet underparts and contrasting black wings was at Montana de Oro State Park, SLO, 24 May 2003 (JR; 2003-073). A female at the Environmental Nature Center, Newport Beach, ORA, 3 Oct 2003 (DRW; 2004-008) was a bit early for fall. A first-fall female at the Big Sur R. mouth, MTY, 28 Oct–6 Nov 2003 (MBr; DR†, RST; 2003-147), another female at Arroyo Grande, SLO, 30–31 Oct 2003 (JMC; BS 2003-190), a male at Pt. Loma, SD, 2–15 Nov 2003 (GMcC; MBi, PAG, HI, AL, TMcG, MS†, MSanM; 2003-154), and a first-fall male at Loyola Marymount University, Westchester, LA, 29 Nov 2003 (DSC; 2004-015) fit this species' usual late-fall pattern of occurrence. Almost 70% of all accepted Scarlet Tanagers have occurred in fall, 23 Aug–13 Dec; except for the one in August all occurred after late September. See also records not accepted, identification not established.

BAIRD'S SPARROW *Ammodramus bairdii* (4, 1). Remarkably, one on Southeast Farallon I., SF, 28 Sep 2003 (KNN†; JC, PP; 2003-134) (Figure 14) was at the same location and on the same date—34 years later—as California's first on 28 Sep 1969 (DeSante and Ainley 1980). Three of California's four records of this secretive sparrow are from this location. The first is a specimen (CAS #68476), and the other three are supported by photographs.

LE CONTE'S SPARROW *Ammodramus leconteii* (32, 1). One wintered at the Arcata Bottoms, HUM, 2 Dec 2003–*29* Jan 2004 (RG; BDu, KCK, KeR†, JCS; 2003-172), establishing California's fifth winter record of this species. One Committee member noted the orange forehead stripe plainly evident in the photo accompanying this record. Descriptions in this record and drawings in some field guides indicate the forehead and crown stripe are pure white. The front cover of *Western Birds* 35(1), illustrating CBRC 2003-002 (Cole and McCaskie 2004), also clearly shows the orange forehead. See also records not accepted, identification not established.

SNOW BUNTING *Plectrophenax nivalis* (102, 2). One was on Southeast Farallon I., SF, 29 Oct 2003 (NC; MB; 2003-158). A first-fall male at Lemon Tank, San Clemente I., LA, 15 Nov 2003–21 Feb 2004 (BLS†; 2004-013) was the first for Los Angeles Co. and extends the southern limit for this species in California about 180 miles beyond the previous southernmost record, in Kelso Valley, KER (Luther

et al. 1983). A record from the same locale in Nov 2004 is currently under review and may pertain to the same bird. A photograph of the bird on San Clemente I. was published in *N. Am. Birds* 58:144.

PAINTED BUNTING *Passerina ciris* (103, 6). One in its first fall was at Big Pine, INY, 18 Aug 2003 (JH; 2003-191). Reports of first-fall birds from Andrew Molera S.P., MTY, 31 Aug 2003 (CH; 2003-113A) and 16 Sep 2003 (MBr; 2003-113B) most likely pertained to the same individual. One was in Santa Cruz, SCZ, 1–4 Sep 2003 (SG; DLS; 2003-152). Another was at Deep Springs, INY, 7 Sep 2003 (CHo†; 2003-192). One in its first fall was trapped and banded at Southeast Farallon I., SF, 15–22 Sep 2003 (AB†, KNN; 2003-136). The remains of one discovered in a cache of the Loggerhead Shrike (*Lanius ludovicianus*) on San Clemente I., LA, 22 Aug 2003 (BLS†; #SDNHM 50815; 2003-141) was the first accepted for Los Angeles Co. See also records not accepted, identification not established and natural occurrence questionable.

COMMON GRACKLE *Quiscalus quiscula* (65, 4). Males were at Tulelake, SIS, 30 Jan–6 Feb 2003 (KS†; 2003-023) and Sepulveda Basin, Los Angeles, LA, 26 Apr–4 May 2003 (TMcG, MSanM, SSo; 2003-042). One was in Independence, INY, 13 Nov 2003 (RAH; 2003-193), and another was in the Arcata Bottoms, HUM, 28 Nov 2003–14 Jan 2004 (CL; LL‡, KeR, JCS, RS; 2003-173). As expected, all records were of *Q. q. versicolor*, the only subspecies of the Common Grackle known from California. The first state record was supported by a specimen from El Cajon, SD, 20 Nov 1967 (Unitt 2004), and it took 20 years for the first 20 records to accumulate. In the 18 years since then, another 45 have been accepted, some of multiple birds (Cole and McCaskie 2004). See also records not accepted, identification not established.

STREAK-BACKED ORIOLE *Icterus pustulatus* (7, 1). A bright "rich reddish-orange" adult male was at the Big Sur R. mouth, MTY, 24 Nov 2003 (JT; DR; 2003-171). Like all but one of California's previous six Streak-backed Orioles, this one occurred from late fall to early spring. It represents the first record for Monterey Co. and northern California.

COMMON REDPOLL *Carduelis flammea* (73, 11). The Committee reviewed and accepted photographs of 11 specimens collected by John M. Willard at Eagle Lake, LAS, that are housed at CAS:

Female, adult, 30 Nov 1899 (PP†; #CAS 47881; 2003-101).
Male, adult, 30 Nov 1899 (PP†; #CAS 47861; 2003-102).
Male, adult, 30 Nov 1899 (PP†; #CAS 47860; 2003-103).
Male, adult, 30 Nov 1899 (PP†; #CAS 47862; 2003-104).
Female, adult, 5 Dec 1899 (PP†; #CAS 47863; 2003-105).
Male, first-winter, 5 Dec 1899 (PP†; #CAS 47864; 2003-106).
Female, adult, 5 Dec 1899 (PP†; #CAS 47882; 2003-107).
Male, first-winter, 9 Dec 1899 (PP†; #CAS 47866; 2003-108).
Male, first-winter, 12 Dec 1899 (PP†; #CAS 47867; 2003-109).
Male, adult, 13 Dec 1899 (PP†; #CAS 47868; 2003-110).
Male, first-winter, 13 Dec 1899 (PP†; #CAS 47869; 2003-111).

RECORDS NOT ACCEPTED, identification not established

GARGANEY *Anas querquedula*. A bird photographed at the Baker sewage ponds, SBE, 23–24 May 2003 (2003-057) was considered by all ten members to be a female Green-winged Teal (*A. crecca*).

YELLOW-BILLED LOON *Gavia adamsii*. One reported as a fly-by from Goleta Pt., SBA, 14 May 2003 (2003-076) failed to gain acceptance after two rounds.

Many Committee members felt that the observer likely saw a Yellow-billed Loon, but the distance involved, the late date, and failure to fully eliminate a worn second-year Common Loon (*G. immer*) warranted caution.

SHORT-TAILED ALBATROSS *Phoebastria albatrus*. One reported from shore at Pebble Beach, MTY, 9 May 1999 (1999-092B) originally circulated through the Committee as part of a single record of a bird present 1–10 May. However, the plumages described suggested multiple individuals of various ages, so the Committee divided the record into three and reviewed each sighting as a separate record, with the option of combining any or all as "the same bird." The reports for 1 and 10 May were previously not accepted (Cole and McCaskie 2004). Although many Committee members thought that this sighting was the best documented of the three, the majority concluded that the distance involved and the occurrence of Black-footed Albatrosses (*P. nigripes*) with very pink bills (A. Jaramillo and S. B. Terrill pers. comm.) were causes sufficient to question this sighting.

BLACK-CAPPED PETREL *Pterodroma hasitata*. One reported by multiple observers from Pt. Vicente, LA, 20 Sep 2001 (2002-104) was described as slightly larger than a Black-vented Shearwater (*Puffinus opisthomelas*), but Black-capped Petrels are 10–15% larger (Harrison 1983). Leucistic Black-vented Shearwaters are encountered in California frequently (Garrett 1990), and such an identification is perhaps the most likely explanation for this report, as any *Pterodroma* seen from shore in southern California would be remarkable. Even if a *Pterodroma* was seen, the submitted report did not eliminate the similar Juan Fernandez Petrel (*P. externa*) or White-necked Petrel (*P. cervicalis*). Although neither of those species has yet been recorded in California, both inhabit the Pacific Ocean and so seem more likely than the Black-capped Petrel, which is unrecorded in the Pacific.

STREAKED SHEARWATER *Calonectris leucomelas*. A report from West Cove Pt., San Clemente I., LA, 24 Nov 2002 (2002-204) was questioned because of the distance involved and the possibility that a light-morph Wedge-tailed Shearwater (*Puffinus pacificus*) and Cory's Shearwater (*C. diomedea*) might have been difficult to distinguish, given the view. The record received strong support in the first round (8–2) but was questioned by six members in the final round.

MANX SHEARWATER *Puffinus puffinus*. The report of one from Pt. Piedras Blancas, SLO, 7 May 2001 (2001-102) received substantial support in the 3rd and 4th rounds (8–2), but two members believed the documentation was not sufficiently detailed to establish the bird's identity to the standards required for acceptance. Another sighting from Pt. La Jolla, SD, 18 Dec 2002 (2002-219) received only one supporting vote on the second round. Most members agreed that the bird might have been a Manx Shearwater, but the brief and distant sighting left one of the original observers uncertain of the identification.

NAZCA BOOBY *Sula granti*. One reported from a boat during a Christmas Bird Count in San Pedro Harbor, LA, 22 Dec 2002 (2003-082) was seen for only 5 to 10 seconds. All members were uncomfortable with such a brief view, and several important details were not noted, such as the presence of a mask, the black tail, and the extensively black remiges. While some members were comfortable accepting the bird as a Masked/Nazca Booby, most felt the documentation was too brief for acceptance even to the species pair. California has no accepted records of the Nazca Booby, but the species is on the supplemental list on the basis of a first-spring bird that came aboard a fishing boat in Mexican waters 27 May 2001. It stayed aboard until the boat returned to San Diego later that day (Garrett and Wilson 2003).

PINK-BACKED PELICAN *Pelecanus rufescens*. One reported at Abbott's Lagoon, MRN, 31 Oct 2001 (2003-051) was videotaped. Although the tape shows a white

pelican other than the American (*P. erythrorhynchos*), the images on the tape are not adequate to eliminate other pelican species, such as the Great White (*P. onocrotulus*) and Dalmatian (*P. crispus*). Even if the identification had been established, the record would have been questioned on grounds of natural occurrence (see records not accepted, natural occurrence questionable).

GLOSSY IBIS *Plegadis falcinellus*. The report of a juvenile photographed near Pt. Mugu, VEN, 19 Jul–31 Aug 2003 (2003-115) failed after two rounds. The lack of bluish tones to the facial stripe and the date's being very early for a juvenile Glossy were enough to cause eight members to question the identification. The discrimination of young *Plegadis* ibises remains a significant identification challenge, and many juveniles may not be identifiable in the field (Patten and Lasley 2000).

CRESTED CARACARA *Caracara cheriway*. One reported 7 Dec 2002 (2002-218) in Brawley, IMP, was questioned because of the brief view and incomplete description from an observer unfamiliar with the species.

EURASIAN DOTTEREL *Charadrius morinellus*. One was reported from Goleta, SBA, 10 Aug 2002 (2002-211). While suggestive of this species, the documentation failed to note several important field marks, such as the supercilium wrapping behind the head and the pale band on the breast. The date was also two weeks earlier than any previous California sighting of this species. Some members were also concerned that the Mountain Plover (*C. montanus*) was not eliminated. The record received some initial support in the first round but failed in the second round.

AMERICAN OYSTERCATCHER *Haematopus palliatus*. A report of one at Pt. Lobos, MTY, 7 Jan 2003 (2003-204) did not eliminate the possibility of a hybrid American × Black Oystercatcher (*H. bachmani*). These species hybridize regularly in Baja California and perhaps on the Channel Islands (Jehl 1985). Jehl (1985) established criteria for identifying hybrids that the CBRC has used to judge submitted records.

BRISTLE-THIGHED CURLEW *Numenius tahitiensis*. The report of one from Goleta, SBA, 20 Jan 2003 (2003-017) received no support. Most on the Committee were concerned that the Whimbrel (*N. phaeopus*) had not been eliminated, and the January date would have been unprecedented.

BAR-TAILED GODWIT *Limosa lapponica*. One photographed at Moonglow Dairy, Elkhorn Slough, MTY, 26 Oct–1 Nov 2003 (2003-155) was actually a small second-fall Marbled Godwit retaining abnormally faded juvenal plumage wing coverts.

CURLEW SANDPIPER *Calidris ferruginea*. Reports of one at Knight I., SOL, 14 Feb 2003 (2003-052) and four at Russ I., SOL, 19 Feb 2003 (2003-053) were questioned because the descriptions did not mention the white rump or eliminate other species such as the Dunlin (*C. alpina*) or Stilt Sandpiper (*C. himantopus*). The Curlew Sandpiper is unrecorded in California during winter, and four birds together would be unprecedented at any season.

LONG-TOED STINT *Calidris subminuta*. A report of a juvenile from the wastewater treatment plant in Blythe, RIV, 6–7 Sep 2002 (2003-045) was accompanied by a videotape, but eight members felt the identity of the bird on the video was inconclusive or better fit a juvenile Least Sandpiper (*C. minutilla*). The pale base of the bill, a mark critical for the Long-toed Stint, was not described in the report.

LITTLE GULL *Larus minutus*. One reported from Red Hill at the south end of the Salton Sea, IMP, 24 Mar 2003 (2003-055) was photographed, but the photos and accompanying descriptions did not eliminate Bonaparte's Gull (*L. philadelphia*).

BELCHER'S GULL *Larus belcheri*. An alternate-plumaged adult reported flying by San Clemente I., LA, 8 Feb 2002 (2002-039) was questioned because of the brevity of the view (1 minute or less), and the failure of the documentation to eliminate a

Black-tailed Gull (*L. crassirostris*) or a third-year Western Gull (*L. occidentalis*).

THICK-BILLED MURRE *Uria lomvia*. A report of one seen briefly on Monterey Bay, MTY, 12 Oct 2002 (2002-194) suggested this species, but several key marks such as the tomial stripe were not noted.

LONG-BILLED MURRELET *Brachyramphus perdix*. One in partial alternate plumage reported about 1 mile off the mouth of the Little R. near Trinidad, HUM, 28 Aug 2001 (2001-147) received eight votes for acceptance in the fourth and final round. The two dissenting members expressed concern that the bird was with a juvenile Marbled Murrelet (*B. marmoratus*) but the description notes no structural differences between the two. There were also concerns that the criteria for distinguishing transitional plumages of the Long-billed and Marbled Murrelets are not yet well established.

RUBY-THROATED HUMMINGBIRD *Archilochus colubris*. The report of one from Lemon Tank on San Clemente I., LA, 8 Oct 2003 (2004-014) failed on the first round. While the majority of members felt the bird was likely a Ruby-throated, the description's failure to address the shape of the inner primaries made it difficult to rule out species of the genus *Calypte*. Moreover, the failure to note the shape of the outer primaries made it difficult to rule out the Black-chinned Hummingbird (*A. alexandri*). Identification of immature Ruby-throated Hummingbirds requires great care and excellent views.

EASTERN WOOD-PEWEE *Contopus virens*. A report of one in Grasslands Regional Park, YOL, 30 Oct 2003 (2003-183) received no support. The majority of members expressed concern that no vocalizations were heard. Absent their vocalizations, distinguishing the Eastern from the Western Wood-Pewee (*C. sordidulus*) in the field by plumage and structural criteria only is nearly impossible. Only 10 records of this species have been accepted, while 14 reviewed by the Committee have not been endorsed.

YELLOW-BELLIED FLYCATCHER *Empidonax flaviventris*. One reported at Pt. Loma, SD, 14 Sep 2003 (2003-130) was not accepted because of the brief views and discrepancies in the descriptions of the bird's vocalizations. One near Cantil, KER, 4 Oct 2002 (2002-165) received considerable support in the first voting round but in the end was not endorsed because it was silent, and several marks such as the color of the eyering and wingbars were not typical for this species. Another silent bird at Maria Ygnacio, SBA, 14 Oct 2003 (2003-194) was also not endorsed. Distinguishing this species from the Western Flycatcher (*E. difficilis/occidentalis*) is challenging. See Pyle (1997), Heindel and Pyle (1999), and Erickson and Hamilton (2001) for helpful discussions on this identification issue.

ALDER FLYCATCHER *Empidonax alnorum*. An *Empidonax* trapped, banded, and photographed at Southeast Farallon I., SF, 25 Oct–2 Nov 2002 (2003-007) was nearly accepted after the first round, but one of the original observers expressed concerns about the record and indicated that the bird was more likely a Hammond's Flycatcher (*E. hammondii*). Most of the Committee agreed with this observer, but some still considered it to be an Alder Flycatcher, as some measurements fit that species better and the wings appeared to be too black for Hammond's. Identification of most species of *Empidonax* still poses great challenges, even for observers with significant field experience with the genus.

NUTTING'S FLYCATCHER *Myiarchus nuttingi*. A first-winter *Myiarchus* in a residential area of Santa Cruz, SCZ, 1 Jan–3 Feb 2003 (2003-013) was supported by exhaustive documentation including very detailed descriptions and good photographs. As the record circulated through the first round, a review of recordings of the bird's vocalizations indicated that it was an Ash-throated Flycatcher (*M. cinerascens*), and the record received only two supporting votes. By the third round the record received

no support. Distinguishing Nutting's from the Ash-throated Flycatcher by plumage characters alone is very difficult, and not all individuals may be identifiable in the field (Lanyon 1961). Lanyon (1961) suggested that the most reliable field marks for distinguishing this sibling pair are the color of the mouth lining (pink in Ash-throated, orange in Nutting's) and vocalizations. Descriptions of the mouth lining of the bird at Santa Cruz ranged from "bright orange" to "some shade of pink," so differences in this field mark cast doubt among Committee members about the identification. A video recording by one observer captured the vocalizations, which were then converted to a sonogram to allow for direct comparison with vocalizations of known Nutting's Flycatchers. The sonograms provided compelling evidence that the bird was an Ash-throated Flycatcher. A photograph of this controversial bird was published in *N. Am. Birds* 57:287.

BLUE-HEADED VIREO *Vireo solitarius*. One reported at Manila, HUM, 1 Sep 1973 (2002-066) was not endorsed because it was described as being "grayish-green," and most Committee members felt that Cassin's (*V. cassinii*) and Hutton's Vireos (*V. huttoni*) were not eliminated. The early fall date was also a concern since all accepted records of the Blue-headed are after 14 Sep. The description of one at Pt. Reyes, MRN, 26 Sep 1974 (2002-068) was lost. The description of one seen near Camarillo, VEN, 1 Oct 2001 (2001-206) did not adequately eliminate Cassin's Vireo so was not accepted on the third round. One report from Blue Jay Campground, ORA, 19 Sep 2003 (2004-030) was not accepted because it lacked sufficient description of critical field marks such as the contrast between the throat and auriculars, and most on the Committee concluded that Cassin's Vireo was not eliminated. Another at Pt. Loma, SD, 22 Sep 2003 (2003-121) circulated twice but lacked details sufficient for endorsement.

GRAY-CHEEKED THRUSH *Catharus minimus*. One photographed in El Centro, IMP, 15–16 Sep 2002 (2002-173) was endorsed by half the Committee on the first round, but support waned in subsequent rounds over concern that Swainson's Thrush (*C. ustulatus*) was not eliminated.

GRACE'S WARBLER *Dendroica graciae*. A single bird was reported at Natural Bridges S. P., SCZ, 27–29 Sep 2001 (2001-166) at the same time that a Blackburnian Warbler (*D. fusca*) was in the same area, causing some members to be concerned that the reported bird was the Blackburnian.

MOURNING WARBLER *Oporornis philadelphia*. One reported at Mono County Park, MNO, 18 Aug 2003 (2003-125) received support in the first round, but concern about the possibility of its being confused with MacGillivray's Warbler (*O. tolmiei*), also known to be present, led most on the Committee to withdraw their support. The date also raised some concern because it was over one week earlier than California's earliest accepted fall Mourning Warbler. The Mourning Warbler is a rather early migrant in the East, however, and might be expected in California by mid-August (Dunn and Garrett 1997).

SCARLET TANAGER *Piranga olivacea*. A report of one at the Presidio, San Francisco, SF, 31 Aug–3 Sep 2002 (2002-202) was questioned by all but one Committee member in the second round. The description of faint wing bars (atypical for the Scarlet Tanager) and the early date were the primary reasons the record failed.

LE CONTE'S SPARROW *Ammodramus leconteii*. A report of one at Furnace Creek Ranch, INY, 30 Sep 1995 (2003-089), submitted seven years later, was nearly accepted after the first round of voting. Concerns that the Grasshopper Sparrow (*A. savannarum*) had not been eliminated and lack of full confidence by the observer about the identification eroded Committee support, and the record failed in the second round.

*PAINTED BUNTING *Passerina ciris*. One at Sand Dune Park, Manhattan Beach, LA, 27 Sep 2003 (2003-185) lacked adequate documentation and received little support after the first round. The Committee no longer reviews Painted Buntings recorded after 1 January 2005.

COMMON GRACKLE *Quiscalus quiscula*. One observed only in flight at the Big Sur R. mouth, MTY, 18–26 May 2002 (2002-118) was not accepted because of concern over brief views and the possibility that it could have been a hybrid Brewer's Blackbird (*Euphagus cyanocephalus*) × Great-tailed Grackle (*Q. mexicanus*). A hybrid exhibiting characteristics of this parentage was observed in Santa Maria, SBA, during spring 1999 as noted in *N. Am Birds* 53:331.

RECORDS NOT ACCEPTED, identification accepted but natural occurrence questionable

BLACK-BELLIED WHISTLING-DUCK *Dendrocygna autumnalis*. Inquiries by L. Chibana (pers. comm.) revealed that one at the Ridgemark Golf Course near Hollister, SBT, 16 Oct 2003 (MP; 2003-156) had been released there by a local aviculturist.

PINK-BACKED PELICAN *Pelecanus rufescens*. The Committee concluded that one at Harkins Slough near Santa Cruz, SCZ, 24 Oct–24 Nov 2003 (PEG; AS; 2002-148) was most likely the same as the one seen at Southeast Farallon I., SF, in Oct 2000 and Nov 2001 (Cole and McCaskie 2004).

CRESTED CARACARA *Caracara cheriway*. One near Oceano, SLO, 1 Jan 1967 (2004-032) was photographed, with the picture appearing in the 4 Jan 1967 edition of the *San Luis Obispo Telegram Tribune*. Most members felt the tameness of the bird, as well as its falling outside the recent pattern of vagrancy, was reason to question its natural occurrence. See discussion above on this species' being moved from the supplemental list to the main list.

*PAINTED BUNTING *Passerina ciris*. A green bird coming to a feeder at Mission Bay, San Diego, SD, 21 Feb 2003 (J&HB†; 2003-029) was not far from the Mexican border, south of which Painted Buntings are commonly sold as pets. One adult male at Madrona Marsh, Torrance, LA, 23 Sep 2001 (DMo; 2001-164) was in an urban region, where more Painted Buntings are likely to be kept in captivity. The presence of adult males in urban areas where escapees are common poses a difficult challenge for the Committee, as it is likely that some of the reports pertain to wild birds. The Committee does not review Painted Buntings recorded after 1 January 2005.

EUROPEAN GOLDFINCH *Carduelis carduelis*. One coming to a feeder at Sea Ranch, SON, 23–26 Apr 2003 (RK†; 2003-038) was considered by all Committee members to be an escaped bird. One Committee member tabulated at least nine records of this species in the San Francisco Bay Area from 1996 to 2003, and the Committee considers all of them to be escapees. The European Goldfinch is a popular cage bird, and there are many additional sightings of it throughout California.

ACKNOWLEDGMENTS

This report would not have been possible without the 251 observers who submitted reports to the Committee. We are particularly grateful to the many observers who provide ever-improving documentation in the form of photographs and sketches with their reports. Other individuals contributing to the Committee's review of particular species: Tamar Danufsky at HSU provided photographs of the Mottled Petrel; Dan Singer and Lee Evans provided helpful comments on the Bar-tailed Godwit record not endorsed by the Committee, and David Vander Pluym and Alvaro Jaramillo provided the sound recording and sonogram of the reported Nutting's Flycatcher. Committee

members Cole, Heindel, and secretary McCaskie provided input on earlier drafts. Current and recent Committee members Jon L. Dunn, Richard A. Erickson, Kimball L. Garrett, Robert A. Hamilton, Matthew T. Heindel, Marshall J. Iliff, Joseph Morlan, Kristie N. Nelson, Peter Pyle, Michael M. Rogers, Daniel Singer, John C. Sterling, and John C. Wilson reviewed and provided valuable and insightful comments on the draft of this report. Peter LaTourrette provided his editing skills for the photographs and figures in this report. Philip Unitt continues providing his guidance, considerable talent, and editing skills for our publication. We are grateful to WFVZ, whose staff continues to support and generously house the CBRC archives. We extend particular thanks to WFVZ staff members Linnea Hall, Jon Fisher, René Corado, and Peg Stevens, and to Chrystal Klabunde, who recently rearranged and labeled the files for the CBRC archives. We thank Daniel D. Gibson and David L. Suddjian for their comments and corrigenda to the 2002 report.

CORRIGENDA

The following are corrections for the 2002 CBRC report (Cole and McCaskie 2004), *W. Birds* 35:2-31.

The date of the Brown Booby on page 11, given as 12 Sep 2001, is 12 Sep 2000.

On page 11 the genus for Tricolored Heron and Reddish Egret is *Egretta*, not *Egreta*.

In the photo caption for the Harris's Hawk on page 22 and text on page 26, the correct scientific name is *Parabuteo unicinctus*.

On page 9 the correct name of the Garganey is *Anas querquedula*, not *Anas formosa*.

For the Demoiselle Crane on Page 26, the bird was only observed, not photographed, during its two-day stay at Gustavus, Alaska.

On page 25 the correct name of the Yellow-breasted Bunting is *Emberiza aureola,* not *Emberiza elegans*. The latter name applies to the Yellow-throated Bunting.

CONTRIBUTORS

Beverly Adams, Stephanie Arthur, Vaughan Ashby, Nichole Athearn, Joe R. Barth, Mike Barth, Richard Barth (RiB), Helen Bauer, Jim Bauer, Steve Bauer, Rosie Beach, Mark Billings (MBi), William G. Bousman, William Bouton, Justin Box, Matt Brady (MBr), Herb Brandt (HBr), Bev Brock (BeB), John Brollini, Adam Brown, Brenda Burnett, Daniel G. Burnett, Kenneth M. Burton, Kurt F. Campbell, Phil Capitolo, Barbara A. Carlson, Michael Cassidy, Jamie M. Chavez, Josiah Clark, Herb Clarke (HCl), Therese R. Clawson, Pat Coffey, Luke W. Cole, Natalia Collier, Dave Compton, Chris Conard, Daniel S. Cooper, Lew Cooper, Elizabeth A. Copper, Hugh Cotter, Art Cupples, Janet Cupples, Brian E. Daniels, Tamar Danufsky, Al Demartini, Scott A. Demers, Don DesJardins (DDesJ), Henry D. Detwiler, Donald C. Doolittle, Bruce Deuel (BDu), Jon L. Dunn, Todd Easterla, Mark Eaton, Thomas M. Edell, Elias Elias, Andrew English, Jr., Richard A. Erickson, Jules G. Evans, Gil Ewing, Jon Feenstra, Mike Feighner, Rich Ferrick (RFe), Robbie Fischer (RFi), Alan Fish, Nick Fittinghoff, David Fix (DFi), Fran Floyd, Rob Fowler, Wes Fritz, Dave Furseth, Peter Gaede, Kimball L. Garrett, Steve Gerow, Karen S. Gilbert, John Gideon, Peter A. Ginsburg, Dave Goodward, Chuck Gordon, Phillip E. Gordon, Tom Gray, Ed Greaves, Jennifer Green (JeG), John Green, Jim Greaves, Rebecca Green, Jessica Griffiths (JGr), Star Gussman (SGu), Mary Gustafson, Dan Guthrie (DGu), Tonya Haff, Sarah Hamilton (SaH), Steve Hampton, Keith Hansen, Ed Harper, Merry Haveman, Karen A. Havlena, Gjon C. Hazard, Scott Hein (ScH), Jo Heindel, Matthew T. Heindel, Tom Heindel, Phil Henderson, Pablo Herrera, Roger Higson, Bill Hill, Brad Hines (BHi), David J.

Hof, Craig Hohenberger, Kim Hollinger (KHo), James F. Holmes, Mark A. Holmgren, Alan S. Hopkins, Irene Horiuchi, Chris Howard (CHo), Andrew Howe, Steven N. G. Howell, David Hubbard, Robert A. Hudson, John E. Hunter, Marshall J. Iliff, Henry Ingersoll, Alvaro Jaramillo, Dave Johnson, Robb S. A. Kaler, Susan Kaveggia, Eric L. Kershner, Howard King, Alexander E. Koonce, Richard Kuhen, Kenneth Z. Kurland, Keith C. Kwan, Jeri M. Langham, Dan Langhoff, Kevin G. Larson, Andrew Lazere, Paul E. Lehman, Nick Lethaby, Ron LeValley (RLe), Kelli Levinson, Cindy Lieurance, Leslie Lieurance, Randy W. Little, Calvin D. Lou, Oddvin Lund, Elsy-Britt Lundberg-Schildt, Tom Lowe, Suellen Lynn, Michael Mammoser (MMa), Dean Manley, Noel Mann, Curtis A. Marantz, Robert E. Maurer, Jr., Guy McCaskie, Cathy McFadden, Chet McGaugh, Todd McGrath, Tristan McKee, Michael McQuerrey, Martin Meyers, Kathy C. Molina, David Moody (DMo), Joseph Morlan, Steve Morris, Jess Morton (JMo), Jean Myers (JMy), David W. Nelson, Kristie N. Nelson, Todd Newberry, Vince Orsini, Benjamin D. Parmeter, Mark Paxton, Randy Pinkston, Tim Peretti, James E. Pike, Peter Pyle, David E. Quady, Mitch Ratzlaff (MRa), Meghan Riley, Don Roberson, Craig Roberts (CRo), Kathy Robertson, Geoffrey L. Rogers, Michael M. Rogers, Chris Romsos, Kerry Ross (KeR), Jennifer Roth (JeR), Steven C. Rottenborn, Steve Rovell, Richard Rowlett, Jim Royer, Siobahn Ruck (SiR), Matt Sadowski, Mike San Miguel (MSanM), Larry Sansone, Buzz Scher (BuS), John Schmitt, Brad Schram, Michelle Scott (MSc), Tim Searl, Joyce A. Seibold (JSe), Les Shainman, Debra Love Shearwater (DLSh), Norm Shrout, Dave Shuford, Stephen Shunk, Dan Singer (DSi), James Smith, Susan E. Smith, Steve Sosensky (SSo), Anne Spence, Kevin Spencer, Rich Stallcup, John C. Sterling, Dave Steward (DSt), Bradley M. Stovall, Sam Stuart (SStu), David L. Suddjian, Brian L. Sullivan, Chris Tenney, Ryan S. Terrill, Scott B. Terrill, Ron S. Thorn (RSTh), Jim Tietz, Francis Toldi, Gerald Tolman, Philip Unitt, Beth Unterbrink, David Vander Pluym, Kent Van Vuren, Chuck Vaughn, Gene Wagoner, Stan Walens, Ken Watanabe, Walter Wehtje, Jeanne Wheaton (JeW), Jeff Wheaton (JWe), Kenneth L. Weaver, Bruce E. Webb, Richard E. Webster, Chris West, Grant Weyburne (GWe), Jerry White, Matt Williams, Douglas R. Willick, John C. Wilson, Roger Wolfe, Jared Wolf, Joseph C. Worley, Thomas E. Wurster, Roger Zachary, James O. Zimmer.

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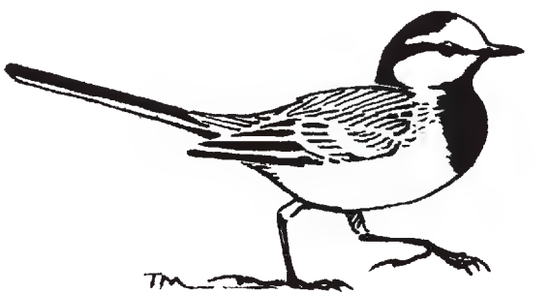

BLACK PHOEBE BREEDING RANGE EXPANSION INTO COLORADO

DOUG FAULKNER, COEN DEXTER, RICH LEVAD, and TONY LEUKERING, Rocky Mountain Bird Observatory, 14500 Lark Bunting Lane, Brighton, Colorado 80603 (current address of Faulkner: 6035 Parfet St., Arvada, Colorado 80004; pomjaeger@aol.com)

ABSTRACT: The breeding range of the Black Phoebe (*Sayornis nigricans*) has recently expanded into Colorado. Since the first state record in 1972, this species has become a regular visitor, ultimately establishing a satellite breeding population in southwest Colorado. In 1998, observers surveying while floating down the San Miguel River, Montrose County, detected 28 Black Phoebes as well as several nests. Since then, Rocky Mountain Bird Observatory (RMBO) staff has monitored the occurrence of Black Phoebe in Colorado. By 2002, through which this paper presents information, the Colorado population of the Black Phoebe, centered along the San Miguel River, numbered probably over 30 pairs.

The Black Phoebe (*Sayornis nigricans*) is a common breeding bird from coastal California and the southwestern United States (primarily Arizona, New Mexico, and west Texas) to South America (Wolf 1997). During the 20th century, this species expanded its breeding range, becoming a common breeder and, in some cases, even year-round resident in areas of southwest Oregon and the lower Colorado River Valley where it was once rare or unknown (Wolf 1997 and references therein). This expansion is supported by Breeding Bird Survey data that imply a significantly increasing trend ($p < 0.01$) of 1.8% per year for the period 1966–1994 (Wolf 1997). The phoebe's breeding range has also expanded north into the interior West with confirmed breeding in northern New Mexico (Tim Reeves pers. comm.) and southeastern Utah (Damian Fagan pers. comm.). The Black Phoebe has recently established a breeding population in Colorado, primarily along the San Miguel River, Montrose County, in the southwest part of the state (Figure 1).

HISTORY IN COLORADO

The Black Phoebe was first recorded in Colorado in 1972, when Claire and Dannette Griffiths and Donna Brezenger found this species on 13 May during the Pueblo Audubon Society's annual Spring Count Day (Ligon and Griffiths 1972, Kingery 1972a, Reddall 1973). Jerry Ligon confirmed nesting on 21 July (Ligon and Griffiths 1972). Despite three nesting attempts, the pair apparently failed to raise any fledglings (Kingery 1972b). A pair—presumably the same pair—nested at this location from 1972 to 1974, raising a fledgling in 1973 (Kingery 1973, Reddall 1974, 1975, Andrews and Righter 1992). The second state record, also from Pueblo County, involved a single bird found in April 1975 (Colorado Bird Records Committee [CBRC] files; Table 1). Another pair was found along the Animas River in Durango, La Plata County, 9 August–23 September 1977 (Fox 1978). Reports of individual birds on 18 May 1979 along the Arkansas River near Pueblo Reservoir, Pueblo County, and 16 May 1981 during the Durango

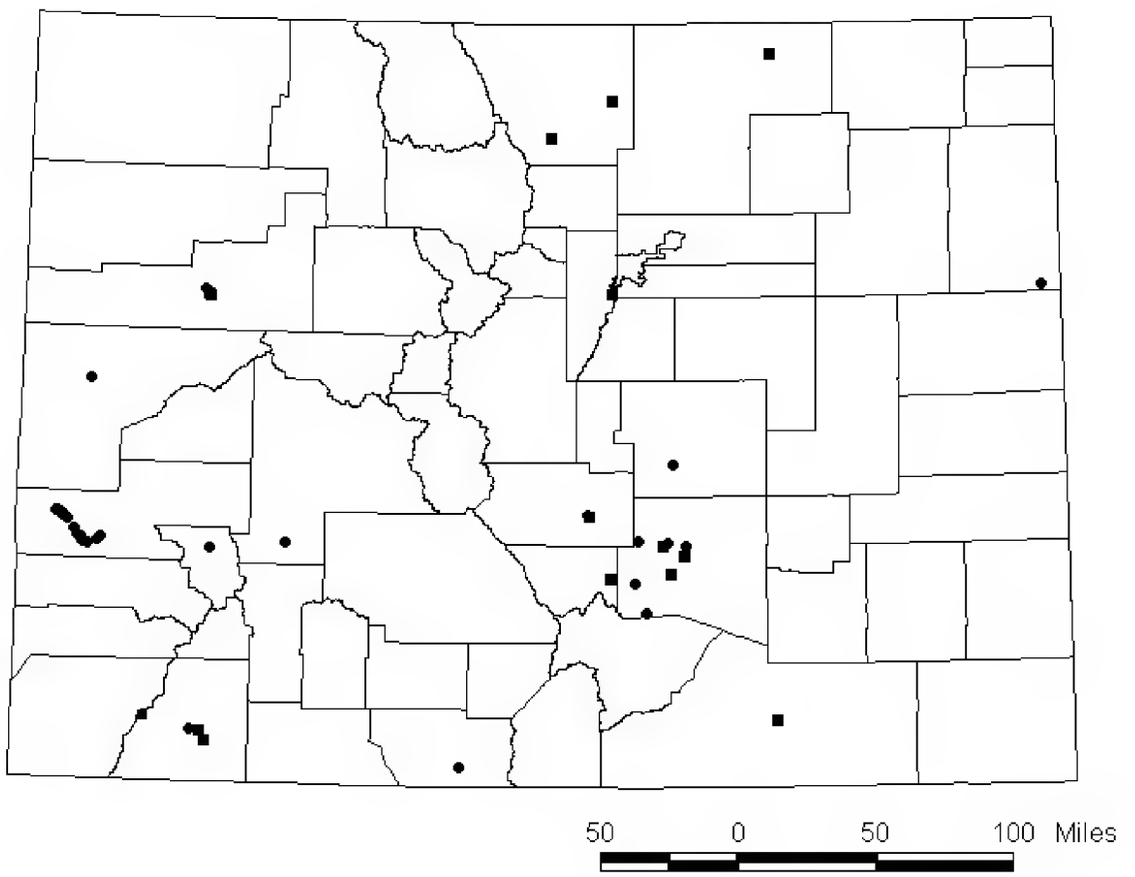

Figure 1. Substantiated records (circles) and undocumented sightings (squares) of the Black Phoebe in Colorado. Note the concentration of records in the state's southwest corner along the San Miguel River. Beginning in 2002, the Colorado Bird Records Committee no longer requests documentation for Black Phoebe sightings at known breeding locations along this river.

Spring Count went undocumented to the CBRC and, although undoubtedly correct, are not substantiated records (Kingery 1979, 1981; Table 2).

The first record accepted in the 1980s was of an individual observed at Ridgway, Ouray County, on 20 May 1985 (Janos 1985). Sightings became more regular through the late 1980s and 1990s (annually since 1994), with almost all from Pueblo County or the southwestern counties (Figure 1). An apparent invasion of Black Phoebes occurred in May 1995 with individuals seen at Fort Collins, Larimer County (6 May), Lake Estes, Larimer County (17–21 May), Pawnee National Grassland, Weld County (23–24 May), and a pair at Uravan, Montrose County (28 May). Unfortunately, documentation of these observations went unsubmitted to the CBRC (Percival 1995) although Ely (1995) reported the bird at Fort Collins, with a photo, in the *Colorado Field Ornithologists' Journal*.

Volunteers for the Colorado Breeding Bird Atlas confirmed three more breeding locations during the eight years (1987–1994) of atlas work (Jones and Kingery 1998). In June 1987, Mark Yaeger and Bob Doyle discovered Colorado's second nesting site under a rocky overhang in a small cove at Pueblo Reservoir, Pueblo County (Yaeger 1987). On 23 May 1993, a group of birders found a Black Phoebe along the San Miguel River at Uravan,

Table 1 Documented Records of the Black Phoebe in Colorado[a]

First date	Last date	Location	County
13 May 1972[b]		Burnt Mill Road	Pueblo
21 Apr 1973[b]	6 Sep 1973	Burnt Mill Road	Pueblo
20 Apr 1974[b]	4 July 1974	Burnt Mill Road	Pueblo
20 Apr 1975		CF & I Lakes	Pueblo
9 Aug 1977	23 Aug 1977	Durango	La Plata
20 May 1985		Ridgway	Ouray
7 Jun 1987	26 June 1987	Pueblo Reservoir	Pueblo
12 Jun 1988		Hale Ponds	Yuma
31 Mar 1991		Fountain Creek Regional Park	El Paso
26 Apr 1992	21 Jun 1992	St. Charles Canyon	Pueblo
11 May 1994		Rifle	Garfield
21 Jun 1994		Uravan bridge	Montrose
14 Oct 1995	17 Dec 1995	Canon City Riverwalk	Fremont
18 Jul 1996		Uravan	Montrose
19 Jul 1996[c]		Rio Grande	Conejos/Costilla
24 May 1997		Lake City	Gunnison
22 Mar 1998		Uravan	Montrose
22 Mar 1998		Calamity bridge	Montrose
22 Mar 1998		Gypsum Gap	San Miguel
21 Apr 1998		Valco Ponds, Pueblo	Pueblo
6 Jul 1998		Big Gypsum Valley	San Miguel
23 Aug 1999		Terlesa Ave. near Colorado City	Pueblo
21 Aug 2001		Grand Junction	Mesa

[a]As of 2002, the Colorado Bird Records Committee stopped requesting documentation for Black Phoebes seen along the main stretch of the San Miguel River, Montrose County, on which they are known to nest.

[b]These dates represent only one record, of a pair at the same location in each year.

[c]Suspected of breeding (Janos 1998).

Montrose County, and an atlas worker confirmed breeding at this location on 12 June. Black Phoebes have nested at this location annually since then. In 1993 and 1994, atlas workers visited the Uravan location several times and surveyed the 5-mile stretch of river that is closely paralleled by a road between Uravan and the confluence of the San Miguel and Dolores rivers. Atlas field workers reported only one observation on the San Miguel away from the known nest site. The third confirmed nesting attempt was in 1994 in Las Animas County along an ephemeral stream. Atlas participants discovered three more sites (two with assumed mated pairs) elsewhere in the state during the atlas period but did not confirm breeding at those locations.

THE SAN MIGUEL OUTPOST

On 12 July 1998, as part of an evaluation of low-elevation riparian habitat in western Colorado, Coen Dexter and Brenda Wright surveyed the San Miguel River between the town of Naturita and a bridge 2 miles upstream from Uravan, a distance of approximately 14 river miles. In the course of that survey, they counted 28 Black Phoebes at 12 sites, about half adults

Table 2 Published Black Phoebe Reports in Colorado through 2001 Unsubmitted to the Colorado Bird Records Committee

Date	Location	Number	Source
2 Apr 1978	Pueblo, Pueblo Co.	1	Moulton 1979
12–14 May 1978	Pueblo, Pueblo Co.	1	Moulton 1979
18 May 1979	Pueblo Reservoir, Pueblo Co.	1	Blake 1980
16 May 1981	Durango, La Plata Co.	1	Kingery 1981
25 Apr 1989	Chatfield State Park, Jefferson/Douglas Co.	1	Martin 1989
17 May 1991	Thompson Park, La Plata Co.	1	Jones and Kingery 1998
15 Nov 1991[a]	Boulder, Boulder Co.	1	Dexter 1992
5 May–sumer 1993	Uravan, Montrose Co.	2 ad., 3 juv.	Jones and Kingery 1998
17 Jul 1994	Dolores/San Miguel rivers, Montrose Co.	1	Jones and Kingery 1998
22 Jul 1994	Loma Linda atlas block, La Plata Co.	2	Jones and Kingery 1998
summer 1994	Lambing Spring atlas block, Las Animas Co.	Nest with eggs	Jones and Kingery 1998
6 May 1995	Fort Collins, Larimer Co.	1	Ely 1995, Percival 1995
17–21 May 1995	Lake Estes, Larimer Co.	1	Percival 1995
23–24 May 1995	Pawnee National Grassland, Weld Co.	1	Percival 1995
28 May–6 Jun 1995	Uravan, Montrose Co.	2	Percival 1995, 1996a
25 Apr 1996[b]	Uravan, Montrose Co.	2	Ely 1996a, 1997b
28 Jul 1996	Durango, La Plata Co.	1	Ely 1997a
15–23 Aug 1997	Burnt Mill Road, Pueblo Co.	1 ad., 2 juv.	Ely 1998
13 Jun 1998	S. of Uravan, Montrose Co.	2 juv.	Ely 1999
13 Jun 1998	Uravan, Montrose Co.	2 ad., 3 juv.	Ely 1999
Summer 1998	Rifle, Garfield	Nest	Leukering 2000
17 Mar 1999	Uravan, Montrose Co.	2	Leukering 1999
1 Jul 1999	San Miguel River, Montrose Co.	22	Leukering 2000
Summer 1999	Rifle, Garfield Co.	Nest/nestlings	Leukering 2000
May 2000	Rifle, Garfield Co.	1	Leukering and Wood 2000
5 May 2000	Dolores River near Slick Rock, San Miguel Co.	2	Leukering and Wood 2000
5 May 2000	Dolores River/Roc Creek, San Miguel Co.	2	Leukering and Wood 2000
8 May 2000	San Miguel River, Montrose Co.	18	Leukering and Wood 2000
8 May 2000	Dolores River/Mesa Creek, San Miguel Co.	2	Leukering and Wood 2000
4 June 2000	St. Charles Canyon, Pueblo Co.	2	Leukering and Wood 2001
19 May–summer 2000[c]	Burnt Mill Road, Pueblo Co.	1	Leukering and Wood 2001
13 May 2001	Cañon City, Fremont Co.	1	Wood and Semo 2001a
21 May–summer 2001	Burnt Mill Road, Pueblo Co.	2	Wood and Semo 2001b

[a]Published account states that the bird "was described as eating sunflower seeds," suggesting a misidentified Slate-colored Junco (*Junco hyemalis*), not the strictly insectivorous Black Phoebe.

[b]Most likely the same pair of birds documented 18 July 1996 (see Table 1). Up to five birds were seen at this location until at least 8 September.

[c]Apparently paired with an Eastern Phoebe (*Sayornis phoebe*).

and half juveniles. In addition, they observed several phoebe nests situated under overhanging ledges 3 to 6 feet above the water level. Their observations made it clear that the San Miguel River held a small population rather than an isolated pair of Black Phoebes. Their discovery piqued interest in determining the true status of this species in Colorado. Since 1999, RMBO has monitored the status of Black Phoebe throughout the state, but in particular along the San Miguel River.

In 2000, as part of RMBO's effort, Faulkner and Levad surveyed approximately 22 miles of the San Miguel for Black Phoebes, rafting from the bridge at Piñon to the bridge at Tabeguache Creek above Uravan. They found the first phoebe approximately 5 miles below Piñon. In the course of that float survey, they counted 20 adults and 12 nests at 24 sites. On June 12, they surveyed the San Miguel from the Tabeguache Bridge to its confluence with the Dolores River and counted 10 adults and eight nests, three of which were occupied, at seven sites. Downstream on the Dolores, they found a pair of phoebes each at the bridges at Mesa and Roc creeks. Earlier, Faulkner observed a Black Phoebe along the Dolores at the Slick Rock Bridge, 20 air miles upstream from its confluence with the San Miguel. In all, the 2000 surveys detected 34 adult Black Phoebes and 22 nests at a total of 33 sites on the river.

In 2001, Dexter and Wright conducted more intensive surveys. Beginning in early March, they made observations on several occasions from selected points along the river. They noted the first Black Phoebe on 22 March. In April and May, they saw phoebes at several sites visible from the highway between Naturita and Uravan. On 13 May, they visited the Slick Rock Bridge and found two used nests upstream and sighted one adult Black Phoebe. On 27 May, they saw an adult at the Piñon Bridge, 5 miles upstream of any previous observation on the San Miguel. On 29 May and 30 May, they surveyed the San Miguel and Dolores from Naturita to the Roc Creek Bridge, floating all but the last 5 miles of this stretch of river. They located 45 nests, at least 10 of them occupied by adults or juveniles, and counted 25 adults and nine juveniles at 33 sites on the river. On a late visit (8 August) to a bridge access from a gravel mine 3 miles above Naturita, they observed an adult Black Phoebe feeding two fledglings. Several previous visits that year to this bridge had not detected any phoebes.

In 2002, low water levels prevented another season of intensive floating surveys, yet 26 individual phoebes at 16 sites were detected along the San Miguel River at sites accessible by roads. An additional 14 birds were discovered at 10 sites along the Los Pinos, Piedra, and Animas rivers in Archuleta and La Plata counties. These new sites in the southernmost counties began to fill the gap between the historical population and the San Miguel outpost.

OTHER RECORDS

Colorado's northernmost nesting record is from the Colorado River near Debeque, Garfield County, where a pair was found in 1998; this site was occupied again in 2000 and 2001. Individual Black Phoebes have been sighted in apparently suitable habitat on the Lake Fork of the Gunnison River, Gunnison County (2000), and on Rifle Creek, Garfield County (2001), but investigations have not revealed evidence of nesting. There is only one reliable winter record for Colorado, of an individual along the Arkansas River in Cañon City, Fremont County. It was found in mid-October 1995 and stayed into February 1996 (Ely 1996b, Percival 1996).

CONCLUSION

It is possible that the population on the San Miguel has existed for some time undetected. However, several factors suggest that the population is relatively new and is currently expanding: (1) the increase in number of birds between Naturita and Uravan from just 1998 to 2001, (2) the lack of observations between Uravan and the confluence of the San Miguel and Dolores rivers during atlas work in 1993 and 1994 despite intensive searching along a section of the San Miguel River that in subsequent years has hosted several nesting pairs, and (3) the recent discovery of nesting pairs at bridges, which had been checked in past years, several miles away from the center of the San Miguel River population.

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CHANGES IN WINTER ABUNDANCE OF THE RUDDY TURNSTONE ALONG THE COAST OF CALIFORNIA

EDWARD R. PANDOLFINO, 5530 Delrose Court, Carmichael, California 95608; ERPfromCA@aol.com

JAMES W. HELMERICKS, Colville Village via Pouch 340109, Prudhoe Bay, Alaska 99734

ABSTRACT: We used data from Christmas Bird Counts (CBCs) to demonstrate a significant decline over the last 28 years of the Ruddy Turnstone (*Arenaria interpres*) population wintering along the coast of California. Of the seventeen CBCs with analyzable data, eight revealed significant decreases, but none revealed an increase. The average number of Ruddy Turnstones counted since 1990 has decreased by 43% compared to the average prior to 1990. Declines were noted on CBCs from north of San Francisco to San Diego. Older data from some of the California CBCs suggested that the higher numbers of turnstones recorded in the late 1970s and 1980s may have reflected a period of unusually high abundance, perhaps part of a cyclic change. Several factors may have contributed to the decrease of the Ruddy Turnstone in California. However, we suspect that the most important is climate change, possibly related to the long-term fluctuations of sea-surface temperature known as the Pacific decadal oscillation. There may have been a decline in the quality of intertidal habitats along the California coast, affecting wintering populations of the Ruddy Turnstone and possibly of the Wandering Tattler (*Heteroscelus incanus*).

Among the most cosmopolitan of birds, the Ruddy Turnstone breeds across the northern arctic regions of North America, Greenland, Europe, and Asia. It can be found wintering on the shores of every continent except Antarctica (Hayman et al. 1986). It is a common spring and fall migrant and uncommon but regular winter visitor along the California coast, mainly south of Mendocino County (Small 1994, Nettleship 2000). In winter it forages in the rocky intertidal zone on a wide variety of invertebrates but also uses a wide range of habitats and takes a great variety of prey (Shuford et al. 1989, Whitfield 1990, Gill 1997, Nettleship 2000, Smart and Gill 2003).

The overall population of the Ruddy Turnstone seems to be relatively stable. The International Shorebird Survey (Howe et al. 1989) covered the period from 1972 to 1983 and found no statistically significant trend at migratory stopover sites on the east coast of North America. Clark et al. (1993) measured peak numbers in migration at Delaware Bay from 1986 to 1992 and found no trend. Sagar et al. (1999) found no discernable trend in wintering (austral summer) Ruddy Turnstones in New Zealand from 1983 to 1994. In Britain, surveys reviewed by Austin et al. (2000) covering the period 1969–1996 found no significant population changes. Rehfisch et al. (2003), however, comparing more complete surveys in Britain in winter 1984-85 to those in winter 1997–98, detected a decline of 16%.

With the exception of local observations from Southeast Farallon Island and nearby coasts (Pyle and DeSante 1994), Monterey County (Roberson 2002), and Santa Cruz County (D. Suddjian pers. comm.), there have been no reports of a general decline in Ruddy Turnstones wintering in California.

Winter is a particularly good time to survey Ruddy Turnstone populations because this species is extraordinarily faithful to its winter sites (Metcalfe and Furness 1985, Summers et al. 1989, Burton and Evans 1997) and relatively sedentary within them (Pearce-Higgins 2001). The changes in abundance shown by our analysis of California Christmas Bird Count (CBC) data, while not significant in terms of the worldwide population of Ruddy Turnstones, suggest that some localized phenomena have affected this subset of birds on its wintering grounds, in its breeding range, or at its migratory stopover points. We examined several factors that might have affected numbers of California's wintering Ruddy Turnstones.

METHODS

We took the following steps to minimize the problems associated with using CBC data to analyze long-term population trends:

1. Wherever possible, we consulted with count compilers to determine if any of the observed data on turnstones could have been affected by changes in observers, changes in geographic coverage (especially changes that could have caused double counting or birds to be missed), changes in time of day or tidal periods when appropriate habitats were counted, or major alterations in local habitat or access to that habitat. On this basis, we eliminated the Santa Maria–Guadalupe CBC because the compiler had concerns that changes in geographic coverage may have affected the reliability of the data.
2. We used data only from CBCs in which the number of observers and hours of observation exceeded 48 party hours, equivalent to at least 6 parties counting for at least 8 hours each. Because Ruddy Turnstones are not widespread and each CBC usually found all or nearly all the birds in a few specific areas, this effort should have been adequate. We did not use count-wide party-hours to normalize data among counts because that would tend to reduce artificially the numbers of birds from well-covered circles.
3. We included data only from circles that had been counted in least 26 of the 28 years from 1976 to 2003 to eliminate CBCs that were not run regularly during this period.
4. We included only CBCs that found, on average, more than five Ruddy Turnstones per year to eliminate CBCs where this species is rare or irregular.
5. All CBC data obtained from the National Audubon Society's website (www.audubon.org/bird/cbc) were checked with the local compilers. When discrepancies were found, the local compilers' data were used.

Under these criteria, 17 California CBCs provided data sufficient for analysis of the Ruddy Turnstone's population trends (Figure 1). Using these same criteria, with data for the same period from the same 17 count circles, we analyzed results for five additional species typical of rocky shorelines: the Black Turnstone (*Arenaria melanocephala*), Black Oystercatcher (*Haema-*

Figure 1. The 17 CBC circles used for Ruddy Turnstone analysis. Locations approximate and circles are not to scale. From north to south, the circles are West Sonoma (WS), Point Reyes (PR), Oakland (OAK), Crystal Springs (CS), Hayward–Fremont (HF), Año Nuevo (AN), Santa Cruz (SC), Moss Landing (ML), Monterey Peninsula (MP), Morro Bay (MB), Santa Barbara (SB), Malibu (MA), Los Angeles (LA), Palos Verdes Peninsula (PV), Orange County Coastal (OC), Oceanside/Vista/Carlsbad (OVC), and San Diego (SD).

topus bachmani), Surfbird (*Aphriza virgata*), Wandering Tattler (*Heteroscelus incanus*), and Whimbrel (*Numenius phaeopus*).

We chose 1976 as the beginning of our study period because the number of count circles that meet our criteria of consistent compilation and adequate effort decreases rapidly before that year. Also, checking with compilers about

local changes is difficult or impossible with counts older than 1976. We did analyze a limited number of counts going back to 1962, but we have reduced confidence in those data.

We assigned data from all counts to the earlier of the two calendar years covered by each count period; for example, a CBC conducted in January 1979 is recorded as a 1978 count.

We determined the statistical significance of any change over time by means of paired *t* tests comparing the period 1976–89 to 1990–2003. Any observed changes were considered significant at a probability of $p < 0.01$.

Information on band recoveries was compiled from the United States Geological Survey Bird Banding Laboratory database. Whenever possible, we supplemented and confirmed these data by contacting the original bander.

RESULTS

Ruddy Turnstone Numbers

The Ruddy Turnstone declined on 8 of the 17 California CBCs analyzed (Table 1). The species did not increase significantly on any California CBC. Declines were geographically widespread and, in many cases, dramatic (Figure 2). CBCs in Monterey, Santa Cruz, and Orange counties typically reported 20–50 birds per year in the 1980s but fewer than 10 per year after then. San Diego reported well over 100 Ruddy Turnstones on every count from 1976 to 1984 but has exceeded 100 only twice in the 19

Table 1 Change in Numbers of Ruddy Turnstones in 17 California Christmas Bird Count Circles

CBC circle	Average 1976–89	SD[a]	Average 1990–2003	SD	*p*
West Sonoma	43	28	29	12	NS[b]
Point. Reyes	19	7	1	1	<0.0001
Oakland	24	14	7	5	<0.01
Crystal Springs	22	14	9	7	<0.01
Hayward–Fremont	21	18	21	18	NS
Año Nuevo	10	7	1	3	<0.001
Santa Cruz	37	16	14	16	<0.01
Moss Landing	41	19	36	33	NS
Monterey Peninsula	28	13	7	9	<0.01
Morro Bay	5	7	4	3	NS
Santa Barbara	3	2	7	5	NS
Malibu	18	13	15	9	NS
Los Angeles	24	10	24	13	NS
Palos Verdes	13	10	14	11	NS
Orange County coastal	23	11	4	3	<0.0001
Oceanside	3	2	8	5	NS
San Diego	123	45	59	28	<0.001
Average of all circles	27	4	15	5	<0.0001

[a]SD, standard deviation.

[b]NS, not significant; $p > 0.01$.

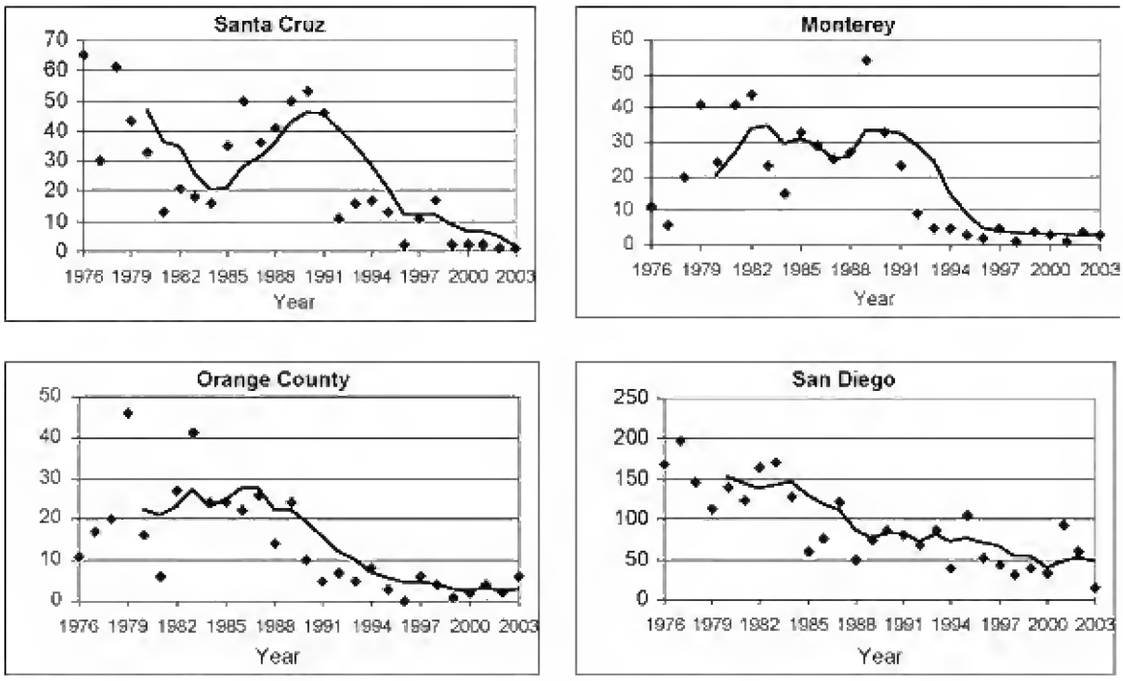

Figure 2. Scatter plots of Ruddy Turnstone abundance with 5-year moving average, 1976–2003, at selected CBC circles in California.

subsequent years. Declines are highly significant when averaged over all 17 CBCs. During the 14 years from 1990 to 2003 the average number of Ruddy Turnstones per CBC was more than 40% lower than in the previous 14 years.

Other Rocky Shoreline Species

Using averages per usable CBC, we detected a decline in the Wandering Tattler (62% decline, $p < 0.0001$) and an increase in the Whimbrel (38% increase, $p < 0.0001$). The Black Oystercatcher, Black Turnstone, and Surfbird showed no trend.

Pre-1976 Data

Six of the eight CBCs that showed a significant change in Ruddy Turnstone numbers 1976–2003 had usable data back to 1962. These CBCs showed a peak in numbers during the late 1970s and the 1980s (Figure 3). Ruddy Turnstones increased significantly on all of these CBCs from 1962–75 to 1976–89. There was no significant difference in Ruddy Turnstone numbers between the early period (1962–75) and the recent years (1990–2003).

DISCUSSION

As discussed by Sauer and Link (2002), the use of Christmas Bird Count data for assessing population trends is problematic. Many of these problems are apparent when one attempts to compile data on species that are generally widespread, difficult to detect, or difficult to identify. However, the Ruddy Turnstone is a better candidate for use of CBC data because it is generally

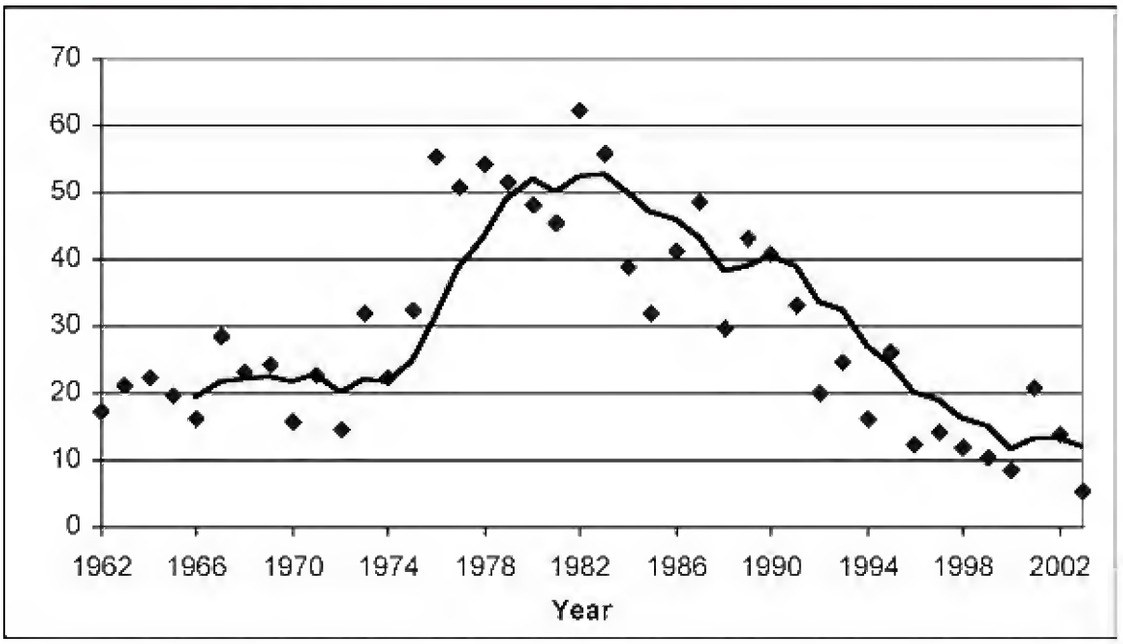

Figure 3. Scatter plot of average Ruddy Turnstone abundance with 5-year moving average, 1962–2003, from six CBC circles (Oakland, Crystal Springs, Santa Cruz, Monterey, Orange County, and San Diego) along the coast of California.

found within a very small subset of any given count circle and is relatively easy to detect and identify.

We conclude that there has been a significant and widespread decline the in number of Ruddy Turnstones wintering along the California coast in the last 28 years. Our observations apply only to the California wintering population. There is no compelling evidence that the species is in general decline, and the California population represents a tiny fraction of the total numbers of the Ruddy Turnstone.

The widespread nature of this decline suggests that a common factor may be affecting the whole of California's wintering population. Interestingly, data collected prior to 1976 from six CBCs suggests that the relatively large numbers of the Ruddy Turnstone recorded from the late 1970s through the 1980s were unusual or part of a cyclic change. Hoffman (1927) and Grinnell and Miller (1944) stated that the Ruddy Turnstone wintered in small numbers along the California coast during the first half of the 20th century.

Factors that, singly or in combination, could explain the observed decline over the last three decades include

1. redistribution of the California population to other areas
2. decreased reproduction or survival on the breeding grounds
3. decreased survival during migration
4. decreased winter survival along the California coast due to degradation of foraging habitat, increased predation, and/or increased competition with other species.

Re-distribution of the California Population

As noted earlier, the Ruddy Turnstone's winter site fidelity is extraordinarily strong (Metcalfe and Furness 1985, Summers et al. 1989, Burton and

Evans 1997, Pearce-Higgins 2001). It is therefore unlikely that this decline represents a change in this species' wintering distribution.

Reproduction or Survival on the Breeding Grounds

Band-recovery data for Ruddy Turnstones along the Pacific Coast are scant but suggest that at least some of this population breeds in the Colville River delta of Alaska. The subspecies that breeds in this area is *A. i. interpres* (Engelmoer and Roselaar 1998, J. Helmericks unpubl. data, *contra* Nettleship 2000), and this same subspecies migrates and winters along the Pacific coast of North America (Paulson 1993, Nettleship 2000). The absence of data that this subspecies has declined in North America significantly during the last few decades makes it unlikely that our observations were due to a general decline in survival of the Ruddy Turnstone on its breeding grounds. However, if the population of the Ruddy Turnstone wintering in California breeds in a limited geographic area, local changes could affect the species' reproductive success. Our current state of knowledge is not sufficient to determine where the California wintering population breeds or if it breeds in a single region or is dispersed over a larger area.

Survival During Migration

Degradation of migratory stopover sites important to this species could result in population declines. There has been extensive urban development along the Pacific Coast during this period, but the same is true of nearly all the world's habitat used by migrating Ruddy Turnstones. It is possible that the California population of the Ruddy Turnstone is particularly dependent on sites that have experienced local degradation or that there has been a widespread decline in the quality of stopover sites along the Pacific Coast.

Foraging Habitat Degradation

The intertidal zone along the California coast is publicly owned and has enjoyed a relatively high degree of protection over the past few decades (Thelander et al. 1994). Direct destruction or conversion of this foraging habitat therefore seems unlikely to be responsible for the Ruddy Turnstone's decline. However, less obvious forms of habitat degradation may have occurred, including changes in quality or abundance of prey as a result of pollution, climate change, or the introduction of alien species.

Pyle and De Sante (1994) looked at population changes in a large number of waterbird species on Southeast Farallon Island west of San Francisco and reviewed CBC data from nearby circles at Point Reyes and southern Marin County. Their findings correspond with ours. They reported decreases for the Ruddy Turnstone and Black Turnstone and a marginally significant increase for the Whimbrel. There was no clear trend for the Wandering Tattler on the island, but both CBC circles revealed statistically significant decreases for this species. These authors speculated that a local decrease in prey availability may have explained their observations.

Bradley and Bradley (1993) noted fluctuations in winter populations of the Black and Ruddy Turnstones correlated with the decline and subsequent restoration of kelp (*Macrocystis* spp.) forests off the Palos Verdes Peninsula.

One of the Ruddy Turnstone's principal foraging strategies in California is to rummage among piles of giant kelp washed up on beaches. According to the California Department of Fish and Game (Giant Kelp, Status of the Population, www.dfg.ca.gov/mrd/mlpa/response/kelp.pdf) and the Monterey Bay National Marine Sanctuary's kelp-management report of 3 October 2000 (King 2000), the extent of kelp forests off the California coast has declined over the past 30 years, and this decline might have affected the Ruddy Turnstone.

It is also possible that climate changes have degraded the quality of the intertidal foraging habitats. Annual fluctuations in sea-surface temperatures (El Niño and La Niña events) occurred sporadically over the period of our analysis. However, not the frequency nor the severity nor the duration of these events fits our data on the Ruddy Turnstone. But the Pacific decadal oscillation (PDO), the long-term fluctuation of sea-surface temperatures in the northeastern Pacific Ocean (Royer 1993, Hare and Francis 1995) may have a role in explaining our observations. Several studies have shown correlations between the PDO and populations of fish (Beamish and Bouillon 1993, Hare and Francis 1995, Francis et al. 1998) and seabirds (Ainley and Boekelheide 1990, Hunt et al. 1996, Peter Pyle pers. comm.). Although comparing our data to the PDO fluctuations of the last century does not suggest any obvious link, the widespread nature and long-term periodicity of the PDO are consistent with the nature of the declines we observed.

Increased Predation

Increased predation on Ruddy Turnstones could also have affected their winter survival. The total number of Peregrine Falcons found on the 17 California CBCs increased dramatically during the last two decades, coincident with the declines in the Ruddy Turnstone that we observed. However, Peregrine Falcon numbers were quite low throughout the 1960s and early 1970s, yet Ruddy Turnstone numbers on the six CBCs we analyzed as far back as 1962 were also low during those years. Moreover, it seems unlikely that increases in the Peregrine Falcon would have affected the Ruddy Turnstone more dramatically than other species of shorebirds.

Increased Competition

The observed increase in the Whimbrel during our study raises the possibility that interference competition has decreased numbers of the Ruddy Turnstone, although on the basis of prey preference (Skeel and Mallory 1996, Nettleship 2000) we would not expect much direct competition between these species.

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NOTES

CALIFORNIA GNATCATCHER FEEDS BEWICK'S WREN NESTLINGS IN AN ABANDONED RODENT BURROW

MICHAEL C. COUFFER, 716 Marguerite Avenue, Corona del Mar, California 92625; mikecouffer@adelphia.net

On 14 and 15 April 2004 I documented an adult male California Gnatcatcher (*Polioptila californica*) repeatedly feeding the nestlings of a pair of Bewick's Wrens (*Thryomanes bewickii*) that had built a nest inside the remnant of a rodent burrow in western Riverside County, California.

Among the many published accounts of interspecific feeding of young in birds (e.g., Skutch 1960, 1961, 1987; Shy 1982; Welty and Baptista 1988), only one involves a gnatcatcher feeding the young of a species other than the parasitic Brown-headed Cowbird (*Molothrus ater*): Erickson (1998) described a male California Gnatcatcher feeding fledgling Bushtits (*Psaltriparus minimus*). True cooperative breeding has not been reported for the California Gnatcatcher (Atwood and Bontrager 2001). An adult male thought to have recently lost its mate "helped" a gnatcatcher pair feed their single fledgling, then later displaced both members of the pair from the territory (Atwood and Bontrager 2001). The gnatcatcher nests in low shrubs, whereas Bewick's Wren is a cavity nester. Both species are typically intolerant of birds of any other species approaching their nests, and there are no published references of a gnatcatcher repeatedly entering the nest of another species, much less an underground cavity nest.

The nest site was east of the city of Perris and south of the Bernasconi Hills, on a rocky ridge covered by sage scrub and surrounded by agricultural fields and rural development. The nest burrow was located at the base of a California Buckwheat shrub (*Eriogonum fasciculatum*) on a northeast-facing slope. Vegetation surrounding the nest was dominated by California Sagebrush (*Artemisia californica*), with other shrub species such as Yellow Bush Penstemon (*Keckiella antirrhinoides* ssp. *antirrhinoides*), California Buckwheat, and White Sage (*Salvia apiana*) occurring at a lower density. The understory consisted primarily of sparse non-native grasses, including Red Brome (*Bromus madritensis* ssp. *rubens*) and Ripgut Brome (*B. diandrus*).

From 16 March to 27 April 2004 I made weekly surveys of this area to determine the presence or absence of the California Gnatcatcher. The male gnatcatcher behaved normally during my initial visits; although I found no female or nest, the male behaved as if a nest existed. On 4 April 2004, the male was foraging in the company of a female; this was the only time I detected a female on the site, an island of habitat of roughly 400 acres. On 14 April, the male was feeding the Bewick's Wren nestlings, and I spent 16 hours on 14 and 15 April observing and photographing this unusual behavior. On the morning of 16 April, the burrow was empty. There was no evidence of disturbance or predation at the burrow entrance, so it is likely that the young fledged successfully. The male gnatcatcher remained in the area after the nestlings left the burrow but was no longer carrying prey. I resumed my focused gnatcatcher surveys across the site, noting the male once per week until the survey ended on 27 April 2004.

Although the prey items provided by the gnatcatcher were smaller than most prey brought by the wrens, the gnatcatcher brought in many more prey items than both of the adult wrens combined. The gnatcatcher foraged continuously for the nestlings while the nest was under observation, whereas the wrens foraged primarily in the early morning and late afternoon. The gnatcatcher never ceased foraging for the nestlings, even during mid-day, when the temperature was elevated. If a wren and the gnatcatcher arrived at the nest site at about the same time, the gnatcatcher was

often the first adult bird to enter the hole; it would not wait for the wrens to feed the nestlings first. The gnatcatcher was less cautious about approaching and entering the hole than were the wrens. If one or both of the adult wrens were visible in shrubs adjacent to the burrow, the gnatcatcher made one or two barely audible mews during the final few meters of approach to the nest. If no wrens were near the nest, the gnatcatcher was silent during its approach.

The wrens often perched in shrubs near the nest and watched the gnatcatcher feed the nestlings without protest. The wrens occasionally scolded and attempted to chase the gnatcatcher, but the gnatcatcher would not be dissuaded. If a wren attempted to chase off the gnatcatcher as it approached the nest, the gnatcatcher occasionally hopped away from the nest through vegetation for a couple of meters with the wren hopping in pursuit, then darted back to the hole, entered, and fed the nestlings while the wren was out of position. The gnatcatcher never attacked the wrens and acted in a submissive way towards the adults; however, none of the adult wrens' actions interrupted the activity of the gnatcatcher around the burrow for more than a few seconds.

The gnatcatcher routinely walked and hopped on the ground outside the burrow entrance and scratched at the ground with its feet, behaviors rarely observed in this species. Atwood and Bontrager (2001) wrote that the California Gnatcatcher is "not observed to walk, hop, or climb; rarely descends to the ground." They referred to M. R. Fugagli observing a California Gnatcatcher "fly-catching from shrubs and ground at emerging swarms of subterranean termites" as an instance of a gnatcatcher descending to the ground. This observation is similar to an instance where I observed a gnatcatcher standing on the ground and picking up subterranean termites individually as they emerged from the ground.

The gnatcatcher removed the nestlings' fecal sacs from the burrow on several occasions, each time flying straight away from the burrow with the sac. The wrens were more secretive when performing this duty, hopping away from the nest before flying off.

The gnatcatcher had to enter the hole to a depth of 18 cm to reach the edge of the nest and feed the nestlings. The gnatcatcher's head was in darkness in the hole's interior, and the bird had to back out and turn around in order to exit the hole. The vulnerability of this position became evident when, in one instance, a wren flew down, reached into the hole, and dragged the protesting gnatcatcher out by its leg. The gnatcatcher flew off and returned approximately one minute later with more prey for the nestlings. In another instance, as the gnatcatcher was exiting the hole, a wren shouldered the gnatcatcher out of the way as it entered.

A few days after the nestling wrens had apparently fledged, the male gnatcatcher built a nest in a California Buckwheat shrub 122 meters up the slope from the Bewick's Wren nest. The bird used new nesting material collected from surrounding shrubs and did not collect material from a previous gnatcatcher nest. As I have often observed this species to use material from a recently failed nest to build a new nest in a new location, an observation of the male collecting new nesting material suggests that there was no recent failed nesting attempt. During nest construction, the male gnatcatcher alternated between nest building and flying about the territory calling, presumably to attract a mate.

It appeared that the male may have been paired, lost its mate, and redirected nesting activities toward raising the nestling wrens. After the nestling wrens fledged, the male gnatcatcher resumed a semblance of normal nesting activity, albeit in the absence of a female.

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Figure 1. California Gnatcatcher bringing insects to a Bewick's Wren nest near Perris, Riverside County, California, April 2004.
Photo by Michael C. Couffer

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FIRST RECORD OF A SHY ALBATROSS IN ALASKA

R. BRADLEY BENTER, U.S. Fish and Wildlife Service, 1011 E. Tudor Road, Anchorage, Alaska 99503; Brad_Benter@fws.gov

HEATHER M. RENNER, U.S. Fish and Wildlife Service, Alaska Maritime National Wildlife Refuge, 95 Sterling Highway, Suite 1, Homer, Alaska 99603

MARTIN RENNER, Memorial University of Newfoundland, Department of Biology, St. Johns, Newfoundland A1B3X9, Canada

On 4 August 2003 we observed and photographed a large dark-mantled albatross (Figure 1) 18 km northwest of Kasatochi Island, in the Aleutian Islands (52° 13′N, 175° 49′W), Alaska. We identified it as a Salvin's Shy Albatross (*Thalassarche cauta salvini*) (for information on the taxonomy of the Shy Albatross complex, see Cole 2000.) Our observation and photographs provide the first record of this species for Alaska and the 10th record for the North Pacific (Table 1). Of these birds, five were identified as Salvin's Albatrosses, five as White-capped Albatrosses (*T. c. cauta/steadi*).

We sighted the bird while traveling on the U.S. Fish and Wildlife Service research vessel *Tiĝlax̂*. The weather was clear and calm with a glassy sea. Noticeably larger than Laysan (*Phoebastria immutabilis*) and Black-footed (*P. nigripes*) albatrosses in the area, the Shy Albatross was first sighted approximately 300 m from the vessel. Unlike the other albatrosses in the area, this bird had extreme difficulty becoming airborne, and we were able to observe it within 30 m of the vessel for >30 minutes.

This albatross had a light forehead, gray hood, dark mantle, extensive white rump and upper-tail coverts, and an olive-gray bill with an obvious dark nail. The wingspan was considerably larger than that of the other albatrosses nearby. The underwing was mostly white with very narrow black margins and extensive black on the tips of the primaries. We also noted the black preaxillary notch at the base of the underwing, which is characteristic of the Shy Albatross (Marchant and Higgins 1990). The combination of gray hood, bill color, and underwing pattern are consistent with subspecies *salvini* (Jean-Claude Stahl in litt., Marchant and Higgins 1990, Shirihai and Jarrett 2002). During our observations we noted that the wings were in molt (Figure 2). From the combination of wing molt, dull bill coloration with dark nail, and near-adult plumage we assessed the bird as a subadult (see Shirihai and Jarrett 2002).

Salvin's Albatross breeds on the Snares and Bounty islands off New Zealand (ca. 76,000 pairs) and on Penguin Island in the Crozet Island group (<5 pairs; Enticott and Tipling 1997). Subadult birds forage widely in the South Pacific, ranging north to about 5° S latitude along the west coast of South America (Marchant and Higgins 1990). Seabird authority Sandy Bartle (in litt.) opined that our bird probably drifted north from those waters via the California Current. Salvin's Albatross is classified as vulnerable because of probable population decline and because breeding is restricted to one tiny island group (Statersfield and Capper 2000, IUCN Red List for birds).

Many observers were present when this bird was sighted, and identification was aided by Daniel C. Barton, Jeffrey C. Williams, Kirsten E. Lindquist, Donald E. Dragoo, and Kevin D. Bell, besides us. We thank Kevin D. Bell and the crew of the M/V *Tiĝlax̂* for a memorable trip. Photos were provided by Kenneth S. Gates. Thanks to Luke W. Cole, Stephen F. Bailey, Thomas J. Evans, and Steven G. Mlodinow for their help and review. Confirmation of identification from the photos and video capture was made by Sandy Bartle and Jean-Claude Stahl, Museum of New Zealand, Te Papa Tongarewa. Thanks to Daniel D. Gibson and the Alaska Checklist Committee for assistance with this manuscript.

Figure 1. Salvin's Shy Albatross observed near Kasatochi Island, Alaska, 4 August 2003.

Photo by K. S. Gates

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Table 1 Records of Shy Albatrosses in the North Pacific

Date	Location	Subspecies	Reference
1 Sep 1951	near Quillayute River, WA	White-capped	Slipp 1952
5 Oct 1996	Heceta Bank, OR	White-capped	Hunter and Bailey 1997
24 Aug 1999	Point Arena, CA	White-capped	Cole 2000
22 Jan 2000	Westport, WA	White-capped	Wahl et al. 2005
29 July–10 Sep 2000	Cordell Bank, CA	Salvin's	McKee and Erickson 2002
10 and 17 Sep 2000	Cordell Bank, CA	Salvin's	McKee and Erickson 2002
27 July 2001	Cordell Bank, CA	Salvin's	Garrett and Wilson 2003
7 Oct 2001	Perpetua Bank, OR	White-capped	Marshall et al. 2003
8 April 2003	Midway Atoll, HI	Salvin's	Pyle and Donaldson 2003

Figure 2. Symmetrical wing molt of the Shy Albatross near Kasatochi Island, shown in attempted takeoff.

Photo by R. B. Benter

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HUDSONIAN GODWIT IN BAJA CALIFORNIA

MARK J. BILLINGS, 3802 Rosecrans Street, PMB #334, San Diego, California 92110; markjbillings@yahoo.com

GUY McCASKIE, 954 Grove Avenue, Imperial Beach, California 91932; guymcc@pacbell.net

On 28 August 2004, Claude G. Edwards, Michael U. Evans, Martha Heath, and Billings headed toward Ensenada in Baja California for a day of birding. At about 10:00, at the Río Guadalupe estuary near La Misión, Billings spotted an unfamiliar bird and quickly determined that its overall size, shape, and grayish-brown coloration indicated a Hudsonian Godwit (*Limosa haemastica*). Among those present, only Edwards had ever seen this species before. The location was a shallow freshwater estuary separated from the ocean by a wide sandbar. The estuary has exposed mud flats and is surrounded by pickleweed (*Salicornia* sp.) and Saltcedar (*Tamarix ramosissima*). At first the observers were looking east towards the sun, under a marine layer, resulting in a hazy image of the bird. As they began discussing the identity of the bird, Billings realized that it was no longer present. They then walked upstream along the estuary's northern shore and relocated it. At distances as close as 12 m, and under better lighting conditions, they were able to study the bird with the aid of Billings' Swarovski STS 80-mm HD spotting scope. At one point, the bird raised its wings and showed dark wing linings, eliminating the similar Black-tailed Godwit (*L. limosa*).

The Hudsonian Godwit was similar in shape to, but noticeably smaller than, an adjacent Marbled Godwit (*L. fedoa*). The bill looked to be about the length of that of a Short-billed Dowitcher (*Limnodromus griseus*; another species present for direct comparison) but was slightly upturned at the tip. The basal half of the bill was pink, the rest black. The dark cap and lores set off the whitish supercilium that extended to just behind the black eye. The whitish throat contrasted somewhat with the pale grayish-buff head and neck. The breast was rich brown, a color that extended down to the flanks, and the undertail coverts were white. The mantle was a rather uniform gray, the buffy feather edges giving the upperparts a scaly look characteristic of juvenal plumage. When the bird was in flight, the white uppertail coverts and base of the tail contrasted sharply with the mostly black tail. The tail itself was narrowly tipped whitish. The upperwings were grayish brown with a white stripe across the base of the outer secondaries and inner primaries, also visible from below. The underwing coverts were black.

Billings returned to the Río Guadalupe estuary four times over the next few weeks and each time found the Hudsonian Godwit with a Marbled Godwit, almost always feeding in belly-deep water. He heard the bird call once in flight: a squeaky, high-pitched *kweep*. The Hudsonian Godwit was last seen by Robert A. Hamilton on 3 October 2004.

The Hudsonian Godwit is a bird of the Americas. It is known to breed in disjunct areas from southern and western coastal Alaska, and northwestern British Columbia, east to Hudson Bay (Kessel and Gibson 1976, Godfrey 1986, Elphick and Klima 2002). A bird found in June during the late 1960s at Plover Bay on the Chukotskiy Peninsula in northeastern Siberia (Kessel and Gibson 1976) appears to be the only one recorded in Asia. In winter, the species is found from extreme southern Peru and Brazil to the southern tip of South America. The main wintering grounds lie on the eastern coast of Tierra del Fuego and adjacent areas, and on the coast of south-central Chile in the vicinity of Chiloe Island. The species is accidental on the Falkland Islands (Elphick and Klima 2002, A.O.U. 1998). Small numbers (up to nine reported per year) also winter regularly in New Zealand, and there are at least three records for

Australia at this time of the year (Higgins and Davies 1996). One at Port Elizabeth in South Africa 1 March–25 April 1987 (*Ostrich* 59:144) probably wintered locally.

In North America, spring migrants move primarily through the interior from Texas and Louisiana north to northeastern British Columbia and Hudson Bay. In fall, migrants take a more easterly route, staging at James Bay, in the maritime provinces of Canada, and in the northeastern United States, then making a presumed nonstop flight over the Atlantic to South America. Some Hudsonian Godwits breeding in Alaska may make a flight over the Pacific directly from Alaska to western South America (S. N. G. Howell in litt.). Displaced birds accompanying migrant Bar-tailed Godwits (*Limosa lapponica*) probably account for the species' annual occurrence in New Zealand (Gill et al. 2005). Hudsonian Godwits found on Norfolk Island 5–17 November 1980 (Higgins and Davies 1996), in Fiji 2–9 May 1981 (*Notornis* 28:128–129), in the Marshall Islands (Elphick and Klima 2002), and on O'ahu, Hawaii, 21–29 July 1987 (P. Pyle pers. comm.) were probably in transit between Alaska and Australasia. Hudsonian Godwits have also occurred accidentally in Great Britain, in fall/early winter and in spring (Vinicomb and Cottridge 1996), and once in Denmark in fall (Lewington et al. 1991).

On the Pacific coast of North America south of Alaska, this species is a casual spring and very rare fall migrant along the coasts of British Columbia (Campbell et al. 1990), Washington (S. G. Mlodinow pers. comm.), and Oregon (Marshall et al. 2003). There are 23 records for California, with six in spring (two on the coast and four inland, all between 9 and 31 May) and 17 in fall (14 on the coast and three inland, all between 8 August and 18 October) (California Bird Records Committee data). Although the Hudsonian Godwit is an uncommon to fairly common spring migrant in southern Mexico, it was previously unconfirmed in fall (Howell and Webb 1995). One collected at San José del Cabo, Baja California Sur, 5 May 1988 (Navarro-S. et al. 1991) constitutes the only previous record for northwestern Mexico.

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Figure 1. Hudsonian Godwit in flight at La Misión, Baja California, 19 September 2004. The white wing-stripe and rump, along with the black underwings are all visible, clearly showing the bird to be a Hudsonian Godwit. The pale fringes on the mantle, scapulars, and upperwing coverts show the bird to be a juvenile.

Photo by Matt Sadowski

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NEW BREEDING LOCALITIES FOR THE SNOWY PLOVER IN WESTERN MEXICO

ERIC MELLINK, Departamento de Biología de la Conservación, División de Biología Experimental y Aplicada, Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California, México (U.S. mailing address: CICESE, P. O. Box 434844, San Diego, California 92143-4844); emellink@cicese.mx

MÓNICA RIOJAS-LÓPEZ, Departamento de Ecología, Centro Universitario de Ciencias Biológicas y Agropecuarias, Universidad de Guadalajara, Guadalajara, Jalisco, México; meriojas@cucba.udg.mx

The breeding status of the Snowy Plover (*Charadrius alexandrinus*) along the western coast of Mexico is only partially known. On the western coast of the peninsula of Baja California it was documented thoroughly by Palacios et al. (1994). Along the Gulf of California coast of the peninsula there are only two known or suggested locations (Page et al., 1995), and few places seem to be suitable. The continental Pacific coast of Mexico has salt flats associated with coastal lagoons, which could provide breeding habitat for this species. However, the plover's breeding distribution here has not been completely assessed, and the only known breeding locations are the delta of the Colorado River (Mellink et al. 1996), Playa Ceuta, Sinaloa (X. Vega pers. comm.), and Oaxaca (Binford 1989). It has been thought that other breeding locations along the western coast are likely (Binford 1989, Howell and Webb 1995). While searching for Gull-billed Tern (*Sterna nilotica*) colonies along the western coast of México in 2003 and 2004, we noticed evidence of Snowy Plover breeding at three previously unknown locations, which we report here (Figure 1). After encountering a Snowy Plover, we surveyed the area using binoculars and spotting scope. At each of these sites, we spent between 2 and 5 hours. Our data represent basically breeding records, but numbers of breeding pairs in each area cannot be estimated.

Laguna Pericos, Marismas Nacionales, Nayarit. This lagoon was created when sea water was drawn through the Pericos Channel to enhance production of shrimp in the area. At its eastern edge (22° 26′ N, 105° 34′ 55″ W), near a small, active salt works, there are several small salt flats of a few hundred square meters each, intermixed with patches with herbaceous halophytic vegetation and some scattered shrubs. At one of these we found two chicks and one adult male engaged in distraction behavior on 10 May 2004. At another such saltflat there were two other pairs of adult Snowy Plovers, but we could not locate their eggs or chicks. The northern part of Marismas Nacionales seems to have at least hundreds of hectares of saltflats, part of which may be suitable for the breeding of Snowy Plovers. However, inventorying the total population in this area might be difficult, as access is hindered by mud and waterways.

Laguna Cuyutlán, Colima. Laguna Cuyutlán is the only large complex of wetlands along roughly 1150 km of Mexico's Pacific coast between Marismas Nacionales, Nayarit, and the center of the state of Guerrero (Mellink and de la Riva 2005). It has extensive salt flats on its northern and northeastern shores, covering hundreds of hectares. Much of these salt flats is occupied by centuries-old communal salt-extraction ponds ("salinas").

On 20 May 2003 we saw one Snowy Plover running on a salt flat adjacent to Salina San Buenaventura (19° 00′ 57″ N, 104° 10′ 44″ W) but could not locate any nest. On 11 May 2004 we found four pairs of Snowy Plovers in an area of 50 × 50 m of abandoned salt pans. We located the three-egg nest of one of them. The nest was on a little gravel mound, and the eggs were lying on a gravel lining. We also found a chick outside this 50 × 50 m plot. Least Terns (*Sterna antillarum*) were also nesting on this flat in both years. This saltflat, total area about 2 ha, is bordered by active salt

Figure 1. The southern Pacific coast of Mexico showing three previously unknown locations of breeding Snowy Plovers.

ponds on its eastern and northeastern side, open water and patches of emergent halophytes on its southern side, and a fringe of mangroves on its northern side. It is likely that Snowy Plovers nest on other salt flats of this lagoon.

Salina La Parota, Guerrero. This salt flat (17° 26′ 24″ N, 101° 12′ 31″ W, apparently also known as "El Cuajo"), also used for the extraction of salt, covers several hectares and is surrounded by low tropical forest. On 23 May 2003 we saw two adults with a chick. When approached the parents engaged in strong distractive behavior. Three other adults ran in pursuit of each other, one of them performing distractive behavior.

It is very likely that Snowy Plovers nest at locations in western México additional to those found by us or previously reported. Extensive surveying of mud and salt flats, which can be derived from cartography to a certain degree, should be the best approach to obtain a complete inventory of sites. However, time and budget issues

might prevent such an approach. Alternatively, focusing on the sites of salt-extraction operations, especially the major salinas, might offer a low-budget approach. These sites can be obtained from the literature (Ewald 1985), the association of salt producers, or asking locally at coastal lagoons and estuaries.

In 2003, our field work in Laguna Cuyutlán benefited collaterally from a grant from the U.S. Fish and Wildlife Service, and PRONATURA–Mar de Cortés provided logistical support. In 2004, field work was financed by Centro de Investigación Científica y de Educación Superior de Ensenada and the University of Guadalajara. We thank José María Dominguez and Francisco Ponce for preparing Figure 1, and Jim H. Watkins and an anonymous referee for very helpful editorial comments.

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CLARK'S GREBE IN WESTERN WASHINGTON

STEVEN G. MLODINOW, 4819 Gardner Ave., Everett, Washington 98203; SGMlod@aol.com

Until 1985, when the two taxa were formally split by the American Ornithologists' Union (1985), Clark's Grebe (*Aechmophorus clarkii*) was long considered conspecific with the Western Grebe (*A. occidentalis*). As field identification of Clark's and Western Grebes can be difficult, the status and distribution of these species, particularly the less numerous Clark's, is still being worked out (cf. Marshall et al. 2003). To understand this species' occurrence in western Washington better, I reviewed records of Clark's Grebe submitted to *WOSNews*, a publication of the Washington Ornithological Society, from July 1993 (when field notes were first published in *WOSNews*) through February 2004.

There are two subspecies of Clark's Grebe. *Aechmophorus c. clarkii* is a permanent resident in central Mexico with a population under 1000 (Delaney and Scott 2002), whereas *A. c. transitionalis* nests in the United States and Canada with a population of 10,000 to 20,000 breeding birds (Jehl 2001). North of Mexico, Clark's Grebes breed primarily from southernmost Alberta, Saskatchewan, and Manitoba south and west to Colorado, Utah, Nevada, and southern California (Sibley 2003). In the Pacific Northwest, a few have nested in southeastern British Columbia (Campbell et al. 2001), Washington has several established nesting colonies in Grant County on the state's east side (Smith et al. 1997), and Clark's Grebe breeds widely in eastern Oregon (Marshall et al. 2003). Since 1998 it has also bred in small numbers in western Oregon at Fern Ridge Reservoir, Lane County (Marshall et al. 2003). Two mixed pairings of Western and Clark's Grebes are known from Washington and Oregon. An adult Clark's and an adult Western were tending young at Fern Ridge Reservoir 17 July 1991 (Tweit and Johnson 1992), and another mixed pair with intermediate-appearing young were at Potholes Reservoir, Grant County, Washington, 25 July 2003 (D. Schonewald pers. comm.).

Clark's Grebes winter primarily in California (mostly from San Francisco Bay south), southern Nevada, westernmost Arizona, southeastern New Mexico, westernmost Texas, and Baja California (Small 1994, Sibley 2003). Small numbers are found annually during winter along the Oregon coast, mostly in the southernmost counties (Marshall et al. 2003).

From July 1993 through February 2004, 96 Clark's Grebes were recorded in Washington west of the Cascade Mountains. All 67 western Washington records, excluding one anomalous record of 20 birds, discussed separately, fall between 4 September and 16 May and involve one to three birds. Peak occurrence is from mid-October to mid-December, with this period accounting for almost 60% of records. After mid-December, the rate of reports is steady through mid-May, with no apparent spring movement. By contrast, in eastern Washington fall migration occurs mostly from mid-August to late October, with a few birds lingering into December and no records later in the winter; spring migration is from early or mid-April into late May (Wahl et al. 2005). Consequently, most of western Washington's Clark's Grebes appear after this species has evacuated the eastern part of the state. Also, apparent hybrids were reported on at least three occasions from western Washington during the study period.

The anomalous record excluded, all but 15 of western Washington's Clark's Grebes have been found on salt water. Of these 15, nine were on freshwater lakes (predominantly Vancouver Lake, Clark County, and large lakes near Seattle) and six were along the Columbia River in Skamania and Clark counties. Most Clark's Grebes have been found in the company of Western Grebes, and there seems to be no difference in

habitat preference between the two (pers. obs.). The total number of Clark's Grebes per year has varied from four (1999) to eleven (1998 and 2000).

Most of western Washington's Clark's Grebe records are from three areas: the Puget Trough, the outer coast, and the Columbia River and adjacent areas. This reflects habitat availability and, likely, observer concentration. Counties with more than five Clark's Grebes recorded include Clark (5), Grays Harbor (12), Island (10), Snohomish (8), Kitsap (8), Pierce (7), Skamania (6), and King (6). .

During 2001, two Clark's Grebes were found on Vancouver Lake on 8 June, and this number grew to 20 by 20 June, but none was seen thereafter. Notably, this observation coincided with an irruption of several other species breeding mainly in interior North America (e.g., American White Pelican, White-faced Ibis, Black-necked Stilt, Wilson's Phalarope, and Black Tern) into western Washington and Oregon (Mlodinow and Tweit 2001).

In summary, reports to *WOSNews* revealed that Clark's Grebe is rare but annual in western Washington, occurring mostly as a fall migrant in marine habitats, with a few birds remaining to winter and a few birds appearing on large freshwater lakes and the Columbia River. It is likely that some spring records pertain to northbound migrants, but there is no clear peak during that season. Summer strays, perhaps driven by drought or other conditions poor for breeding, occur infrequently, but further occasional sightings of Clark's Grebes among summering flocks of Westerns can be expected.

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BOOK REVIEWS

Gulls of North America, Europe and Asia, by Klaus Malling Olsen and Hans Larsson. 2004. Princeton University Press. 608 pages, over 800 color photographs. Hardback, $55. ISBN 0-691-11997-X

Many of us started identifying gulls with the aid of Peter Grant's classic *Gulls: A Guide to Identification*, and for over two decades that work has remained our main reference for tricky identifications. Malling Olsen and Larsson's new gull book (hereafter *Gulls*) aims to replace Grant. The authors state that *Gulls* is a guide to the identification and distribution of the gulls of the Holarctic and should be judged only as such; I will concentrate on these aspects of the book.

Gulls begins with 25 pages of introduction, including many sections commonly included in most identification guides, plus some well-picked photographs illustrating oddities and several plates comparing profiles of adults and wing-tip patterns of all large white-headed taxa treated. This schematic visual approach allows for easy comparison and is a wonderful asset. You may want to copy these plates, laminate them, and take them out into the field. The bulk of the book consists of the species accounts addressing all gull taxa recorded in the Holarctic. Taxonomy follows the *Handbook of the Birds of the World*, except for a few taxa split without much discussion (more advanced aspects of taxonomy are considered beyond the book's scope). I commend the authors for treating taxa such as American Herring Gull and Mew Gull separately from their counterparts in the Old World, but why make poorly documented taxonomic decisions—particularly after mentioning that these are issues outside the scope of the book? This makes navigating the already complex and volatile sea of gull taxonomy even more confusing.

Each species account begins with sections on identification by age class, voice, and molt, followed by a more detailed description of all age classes, and finishing off with sections on distribution, migration, and measurements. Interspersed within each account are one to several paintings illustrating the various age classes, plus well-marked subspecies or hybrids if applicable. These wonderful plates are accompanied by a facing-page summary of key characteristics. Larsson is an incredibly talented artist: not only does he capture subtle differences between gulls, but his understanding of structure is uniformly excellent. A section with generally good to excellent color photos (rarely poor as for the Red-legged Kittiwake) of the species at various ages concludes each account. Photo captions note the bird's age, summarize important illustrated features, and give the location (sometimes vague, such as "California, USA" for some Thayer's Gulls), date (sometimes only month), and photographer. Photos of North American birds appear to be identified correctly, although I might have called the Thayer's Gull in photo 288 a hybrid Herring × Glaucous-winged. Each account also includes a color map showing breeding and nonbreeding distributions and sometimes more detail, such as migration routes and areas of less frequent occurrence. A nice touch is a small colored box that summarizes the main characteristics of each age group, often with comparisons to similar species.

I found *Gulls* to be both informative and frustrating. I was quite impressed with the artwork, quantity of information, and photos, but dismayed by lack of attention to details, poor information on North American taxa, and various other issues. My initial dissatisfaction came in the introduction as I read the sections on age and molt. I wish the authors had used the Humphrey–Parkes system, or plumage cycles (first cycle, second cycle, etc.) instead of the classic juvenile, first-winter, first-summer scheme. This latter system causes confusion and does not allow one to compare apples with apples. The authors themselves note that "first summer" is an artificial term in large gulls, as it is the plumage during the early transition from the first cycle to the second cycle. Why name plumage stages not defined by a molt? This terminology also leads

to confusing photo captions, as for the Great Black-backed Gull. Photo 135 shows a bird labeled as molting into second winter plumage in late July. But first summer plumage is defined in *Gulls* as the plumage of a first-year gull that has started but not completed the molt to second winter plumage. Doesn't that make photo 135 of a first-summer bird? And photo 137 shows two birds in mid-May, one labeled first winter and the other second summer; why isn't the former a first-summer bird? The authors do state that "first summer" is unscientific, which does not trouble me; what troubles me is that the term is applied inconsistently, is confusing, and tells you little. For the Kelp Gull, breeding in the southern hemisphere, it gets even more confusing if one is unaccustomed to summer being December to February.

The identification and description sections are good, although sometimes the writing is awkward. There is a lot of useful information here, and I commend the authors for putting this all together. A problem for the user, however, is insufficient synthesis; the summary box helps but is not enough. I realize that gulls are not simple, but the identification sections are long and not structured to highlight the mix of features that are diagnostic, or nearly so. One ends up reading a lot, flipping to photos and plates, and, after considerable time and effort, arriving hopefully at a pretty good understanding of what to concentrate on. The detailed descriptions are fine but dense, and my guess is that most readers will concentrate on the identification sections, the superb plates, and the photos.

The North American edition of this book is based on the European version, entitled *Gulls of Europe, Asia and North America*. The title should have been left alone, as I found many examples where it was clear that the authors were less familiar with North American taxa. Furthermore, many key references are missing, such as the *Birds of North America* series! More obscure references, such as Birgit Braune's great paper on Bonaparte's Gull migration, and most important regional North American works were also missed. North American species are covered in less detail than European ones (e.g., 24 pages for the European Herring Gull, 15 for the American Herring Gull), particularly in the distribution and migration sections and on the maps. There are also many inaccuracies in the North American maps and distribution sections. For example, the entire Great Lakes breeding range of Great Black-backed Gull is omitted from the map, although the text notes that breeding in the Great Lakes started in 1954. This species is a common breeder on Lake Ontario and has been moving west rapidly, but no details are given for this well-known range extension. Greater detail is given for European populations of the same species, however. Thayer's Gull is another good example: the total population is noted as 4000–6000 pairs (with no reference), but then the Pacific winter population is reportedly 20,000 birds. Northern Baja California is wrongly noted as a site with one of the large winter concentrations (flocks purportedly up to 120 birds!), but no information is given on the much more significant concentrations in the San Francisco Bay area; surprisingly, a maximum of 1000 Thayer's Gulls is reported for Lake Michigan, which seems ridiculously high. It does not take long to find many more examples like this. This level of oversight and lack of attention to detail is unfortunate, and makes one wary of all information in the book.

I have enjoyed using this book during some very exciting gull watching during winter 2004–05. It has taught me a lot, but I have been equally frustrated by it. Nonetheless, I do think the book succeeds in its summary of many new developments in gull identification and distribution since Grant, and furthermore it has color photos. On the other hand, a book dealing with issues as complicated as gull identification must invariably fall short in some aspects. *Gulls* does disappoint in its lack of synthesis and the poor attention to detail of North American distribution. Gull aficionados will need this book for the new information, but they will also have plenty to critique and discuss—and there is nothing a gull watcher likes to do more than that.

Alvaro Jaramillo

Hummingbirds of North America. With Jon L. Dunn. 2004. The Advanced Birding Video Series. Peregrine Video Productions, 7583 Estate Circle, Niwot, CO 80503; 303-652-3678; www.peregrinevideo.com. 179 minutes viewing time. VHS stereo. $34.95, DVD $39.95.

This series made its ambitious debuts in 1997 and 1999 with two videos covering North American gulls. Now it has tackled hummingbirds, a family famous for its powers of flight and iridescent colors, two attributes well suited to media capturing movement. As well as a conventional video cassette, this title (hereafter *Hummingbirds*) is available as a DVD that can be played on computers with CD drives and DVD software; the latter medium allows one to move around quickly within the video, which runs three hours. My review discusses layout and content as well as pros and cons of the media used.

Hummingbirds treats 24 species of hummingbirds that have been recorded in North America, north of Mexico (including the Cuban Emerald, whose occurrence is considered hypothetical by some authors, e.g., the A.O.U.), as well as three species unrecorded north of Mexico (the Rufous-tailed, Azure-crowned, and Amethyst-throated hummingbirds). The card of contents includes a figure showing some features of hummingbird anatomy and a thumbnail glossary of terms.

The introductory section is 12 minutes long and covers important background information. It discusses features useful in identification, such as tail movement on hovering birds (accompanied by well-chosen examples), tail-shape differences (which flash by too fast), and various plumage and bill features. The example chosen to illustrate different bill shapes (using the Broad-billed and White-eared Hummingbirds) was unfortunate: the bill shapes of the individuals shown do not appear overly different—and one's eyes are so impaled on the flagrant white head stripes of the White-eared that even hummingbird novices who watched the introduction with me wondered why these two species would even be considered particularly similar.

Following the introduction come species accounts, broken into five groups: the rufous-green group, the sheartail group, the gray-green group, small tropical hummingbirds (including the medium-sized White-eared and Xantus' hummingbirds), and large hummingbirds (including the genus *Amazilia*, oddly pronounced "Amazilla" in the narration). Species accounts range in length from about 2 to 12 minutes. They begin with an overview noting measurements, geographic range, migration schedule, behavior, sounds, and structure; then come age/sex accounts that cover plumage variation with numerous examples.

By this point you likely will have been seduced by the stunning photography that captures these avian jewels, often including direct comparisons of different species (e.g., a Calliope Hummingbird being replaced on the same perch by a Broad-tailed). I would guess that hundreds of hours of filming were edited down into the images that made the final cut—a lot of work. Commendably, date and location are noted for most birds shown in the species accounts, and, a nice touch, food plants are often also identified by brief on-screen captions that do not distract from the bird images.

Information content is generally high, with field marks both "hard" (e.g., primary shapes) and "soft" (e.g., upperpart coloration) being discussed. Sheri Williamson co-wrote the text with producer John Vanderpoel, and the numerous discussions of feather shapes and tail patterns reflect her extensive experience banding hummingbirds in Arizona. I found little to quibble over in terms of identification details, although I was surprised to learn that "subtle differences in plumage color" are considered a *reliable* field mark (emphasis mine) for problem female-plumaged Black-chinned and Ruby-throated hummingbirds.

Flight displays are shown by means of animated diagrams, a great idea given how difficult it is to capture these actions on video. However, for species I know well the dive displays portrayed are incomplete, or at best atypical; furthermore, the animation for Allen's Hummingbird is not synchronized with the sounds, plus it includes calls not

given by birds during dives. The display of Anna's lacks its diagnostic sound.

Vocalizations can be very useful for identifying hummingbirds, but their potential was not fully realized in this video; for example, comparisons of the Calliope with the Broad-tailed and Rufous, and of the Black-chinned with the Rufous, do not involve analogous calls. And to hear all three species of the Black-chinned, Anna's, and Costa's at one time you have to wait until the last account, for Costa's—but then a good comparison is provided. Users should also note that sounds audible in much footage are often *not* those of the species being shown, which can be confusing (e.g., sounds from Rufous and Broad-tailed Hummingbirds, when a perched male Lucifer Hummingbird is being discussed). Some "quiet time" might have been helpful when the identification emphasizes plumage or structural characters. Quiet is an underappreciated commodity these days, yet it can promote thought and concentration.

Although Jon Dunn's narration is not overly hurried, by halfway through the first species account I found the information stream a little thick and fast. That said, at the end of the green-rufous group there is an excellent, if quick, group summary that conveys the key identification characters, with well-chosen examples. Inconsistently, the summary for the gray-green group is more cursory and too quick to be assimilated. This potential for information overload was also evident in the gull videos, but I am unsure how best to address the problem. Sitting down and flipping through a book, reading text, and comparing photos at your own pace is easier than watching a video that packs in so much information (but, of course, it isn't meant to be watched in one sitting). There is also a difference in text written for a book (which is how much of the narration sounds) and the more casual style of oral communication (which can be easier for a listening audience to receive); attention to this subtle but important distinction could help convey information more effectively.

Another possibility is to slow the video's pace and allow more time with single-frame images—but then, the video is already three hours long! The pause button on your VCR player is likely to wear out quickly while you try to absorb hundreds of helpful facts. The DVD is may be more user-friendly for moving around within accounts, but it is more prone to technical glitches; for example, while I was watching the accounts for Black-chinned and Cinnamon Hummingbirds, and the introduction for the genus *Archilochus*, the video "froze" and could not be viewed in full. But difficulties in getting out of an account and back to the start may simply reflect my own technological incompetence.

The introduction to *Hummingbirds* recommends it be used in conjunction with specialized field guides. Perhaps it could have been produced as an adjunct to these, utilizing its strengths to illustrate flight behavior and compare vocalizations in detail, and not worrying so much about tail-patterns, range maps, and such that can be studied at leisure in books?

The goal of *Hummingbirds* is stated as being to give you the tools to identify these gems wherever you find them in North America. The tools are surely provided but, probably not intentionally, the hyperactiveness of hummingbirds sometimes seems transmitted to the pace of the video. While exciting to watch, this level of intensity can make it difficult to concentrate for long. Thus, there is a huge amount of great information and fantastic video contained in *Hummingbirds*, but I wonder if it tries to deliver too much.

Steve N. G. Howell

FEATURED PHOTO

PINK-SIDED × GRAY-HEADED JUNCOS

ROBERT A. HAMILTON, 34 Rivo Alto Canal, Long Beach, CA 90803; robb@rahamilton.com

PETER A. GAEDE, 6075A Jacaranda Way, Carpinteria, CA 93013; pgaede@earthlink.net

Rich in variation, Dark-eyed Juncos offer endless opportunities for study. The five subspecies groups (Slate-colored, Oregon, Gray-headed, White-winged, and Guadalupe) currently include 15 recognized subspecies (A.O.U. 1957, 1983), with the distinctive subspecies *mearnsi* (Pink-sided) plausibly considered a sixth group. Although it is easy to become overwhelmed by such complexity—the late Ernst Mayr (1942) termed the species a systematist's "nightmare"—here we embrace only the modest goal of illustrating and reviewing one form of introgression, that between the Pink-sided Junco (*J. h. mearnsi*) and the Gray-headed Junco (*J. h. caniceps*). *Junco h. mearnsi* is generally considered part of the Oregon group, but in this discussion—purely for the sake of clarity and with no taxonomic implications—we treat it as a taxon separate and apart from the Oregon Junco, which consists of seven other subspecies. We preface our remarks by directing readers to the superlative article by Dunn (2002), which covered a range of topics concerning *mearnsi*, including its taxonomic history, geographic range, plumage variation, identification of hybrids, and an enlightening analysis of the way 13 field guides have illustrated Pink-sided Juncos (short answer: poorly in general, with seven of them depicting female Oregon Juncos!). It is perhaps the last point that best explains why many of us who have not lived among Pink-sided Juncos (including Hamilton, but not Gaede) so often confuse them with pale Oregon Juncos (a separate topic not covered here) or hybrids. Another important factor surely is the human predilection for naming things, and for preferring tidy categories over messy ones. Many distinguished ornithologists with first-hand experience sorting Dark-eyed Juncos would seek to disabuse us of this habit.

When Ridgway (1897) described the Pink-sided Junco (as a full species, *J. mearnsi*), it was surely the only case in which the person for whom a species was named (*J. ridgwayi* Mearns) diagnosed that taxon's illegitimacy (the type specimen of *J. ridgwayi* was actually a rufous-backed hybrid similar to the middle bird on the back cover) and then named one of the hybrid's parental taxa (*J. mearnsi* Ridgway) after the very colleague who had tried to do him the same favor [see Ridgway (1901:276) for further explanation]. Both *mearnsi* and *caniceps* breed in the central Rocky Mountains, the former north of the latter, with zones of overlap that include parts of northeastern Nevada, southern Idaho, northeastern Utah, and southern Wyoming (Dunn 2002). Both taxa winter extensively in New Mexico, Arizona, northernmost mainland Mexico, and adjacent areas. *Junco h. caniceps* occurs regularly, albeit sparsely, west across most of California and south into northwestern Baja California, with scattered records south to southern Baja California Sur (e.g., Wilbur 1987). Unlike that of *caniceps*, the winter range of *mearnsi* includes almost all of Colorado but is more restricted than that of *caniceps* south and west of there. *Junco h. mearnsi* is casual in coastal southern California and northwestern Baja California (six records south of the border, the most recent on the 17 December 2004 Ensenada Christmas Bird Count), with a more unusual 19 October 1994 record from the Vizcaíno Peninsula of northern Baja California Sur (Erickson et al. 2001).

Speciation in the avian genus Junco, by Alden H. Miller (1941), is widely regarded as the most comprehensive and useful treatment of the genus (e.g., Dunn 2002, Nolan et al. 2002). For our limited purposes, however, we focus on Miller's (1939)

Analysis of some hybrid populations of juncos, allowing his words to carry the discussion. He considered *caniceps* to be "the best subject for special study within the genus [because of the] small separated mountain areas around the periphery of its general range [with] small breeding populations that clearly result from hybridization of *caniceps* with other kinds of juncos. These surrounding kinds happen to be either moderately or very well differentiated from *caniceps*, and the hybrid populations are as a result interesting assortments of individuals."

Regarding behavior of the different forms in these areas of overlap, he wrote, "These Gray-headed Juncos apparently have no inhibitions in accepting a member of another race or 'species' as a mate. While in the field in northern Utah, I became impressed with the random mating of *caniceps* and *mearnsi*. Mixed pairs were taken with young. There seems to be nothing to prevent the complete interpenetration of *caniceps* and *mearnsi* except partial geographic barriers consisting of ecologically unsuited regions. It is difficult to imagine a special survival value in the pink sides of *mearnsi* or in the red back of *caniceps* related to the particular environments. There may be physiological features of the two forms that differ, however. Striking also is the fact that the distinct types *J. c. dorsalis* and *J. o. pinosus* have been hybridized in captivity."

This is but one of many such cautionary passages peppered throughout the literature on juncos. Back color is of central importance in distinguishing *mearnsi* from its hybrids with *caniceps*, and Miller explained how the colors are produced: "*Caniceps* has a single pigment, a reddish phaeomelanin, that gives the rich mahogany red back. In *thurberi* [the Oregon Junco] there is a yellowish phaeomelanin in the bases of the barbules and a dusky eumelanin on the tips of the barbules in a proportion that produces a tan-colored back. *Mearnsi* is similar to *thurberi*, but the yellow phaeomelanin is of slight amount and the tips of eumelanin are extensive. The result is a drab brown back."

Furthermore, "In crosses of these forms it is clear that the eumelanin and phaeomelanin pigments are inherited more or less independently. . . . The eumelanin in hybrids either is present in full amount, absent on the outer vanes of many of the feathers, or absent entirely. There results from the independent assortment of these pigments some types of back coloration unlike either parent."

Males of both *mearnsi* (top photo on the back cover) and *caniceps* × *mearnsi* (middle photo) have pearly gray heads and throats, black lores, and pink bills. The back color, however, differs significantly. Pink-sided backs are dull brown, a tone created from a unique combination of the colors (red, yellow, dusky) mentioned above. Thus a Pink-sided's back color is even drabber than that of most subspecies of the Oregon Junco, and even more distinctly different from the rich chestnut tones that stand out so vividly between the wings of a Gray-headed (middle photo). Hybrids typically show the reddish hues of *caniceps* on the back, and sometimes on the tertials, as shown in this photo.

Consider the sides and flanks, as well: "The sides of *caniceps* are pale gray in contrast to the yellowish and cinnamon pink of *thurberi* and *mearnsi*, respectively. The gray is a eumelanin, the yellow and pinks, phaeomelanin, all rather dilute. In crosses, these pigments do not mix. There is no intermediate pigment, and rarely are the two pigments in the same part of a feather. But, some feathers may be gray on part of the web and pink elsewhere, and in the side area totally gray feathers may be mixed with pink feathers. In the *thurberi–caniceps* hybrids the *thurberi* character is more apparent in females than in males. It appears that there is some interaction with sex factors. In most species of the genus females are more given to developing phaeomelanins than are males. The *mearnsi* type of side seems to be dominant over that of *caniceps* in both sexes."

The hybrid on the back cover shows two points mentioned above. Most obviously, the sides are not gray as in *caniceps*, but neither is the pinkish color as broadly or

as evenly distributed along the sides and flanks as on pure *mearnsi*. Although not shown clearly in this photo, the blush of color on this hybrid's underparts appeared to be somewhat patchy, in keeping with Miller's description above. By contrast, pure *mearnsi* shows a wide and uniform wash of pinkish-cinnamon along the sides that tends to bulge outward toward the belly, particularly on females (Dunn 2002).

The photos on the back cover show well-marked individuals that are not difficult to identify. Those seeking a more thorough and sobering framing of the issues will find it in Dunn's review. As much as anything, we intend our brief treatment as an introduction to Miller's extensive work with this genus, work that remains incomplete to this day. On a more practical level, we hope to keep the broad issues of hybridization closer to the front of birders' minds as they pick through junco flocks and ponder the charming oddballs that stand out among the others, some of which don't appear in any field guides.

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Back cover "Featured Photos" by © Tony Leukering of Brighton, Colorado: Pink-sided Junco (*Junco hyemalis mearnsi*), Maysville, Colorado, December 2004 (top); © Robert A. Hamilton of Long Beach, California: apparent Pink-sided × Gray-headed Junco (*J. h. mearnsi* × *J. h. caniceps*) Rancho El Descanso, Baja California, 4 October 2004 (middle); and © Carol Davis of Taylorsville, Utah: Gray-headed Junco (*J. h. caniceps*), Little Cottonwood Canyon, Utah, April 2002 (bottom).

WESTERN BIRDS

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Front cover photo by © Brian L. Sullivan of Ithaca, New York: Blackburnian Warbler (*Dendroica fusca*), San Clemente Island, California, 30 September 2003.

Western Specialty:
Allen's Hummingbird

Photo by © Brian L. Sullivan of Ithaca, New York:
Allen's Hummingbird (*Selasphorus sasin sedentarius*)
San Clemente Island, California, 27 October 2003

WESTERN BIRDS

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THE BIRDS OF SAN CLEMENTE ISLAND

BRIAN L. SULLIVAN, PRBO Conservation Science, 4990 Shoreline Hwy., Stinson Beach, California 94970-9701 (current address: Cornell Laboratory of Ornithology, 159 Sapsucker Woods Rd., Ithaca, New York 14850)

ERIC L. KERSHNER, Institute for Wildlife Studies, 2515 Camino del Rio South, Suite 334, San Diego, California 92108

With contributing authors JONATHAN J. DUNN, ROBB S. A. KALER, SUELLEN LYNN, NICOLE M. MUNKWITZ, and JONATHAN H. PLISSNER

ABSTRACT: From 1992 to 2004, we observed birds on San Clemente Island, as part of our work toward the recovery of the island's endangered species. We increased the island's bird list to 317 species, by recording many additional vagrants and seabirds. The list includes 20 regular extant breeding species, 6 species extirpated as breeders, 5 nonnative introduced species, and 9 sporadic or newly colonizing breeding species. For decades San Clemente Island had been ravaged by overgrazing, especially by goats, which were removed completely in 1993. Since then, the island's vegetation has begun recovering, and the island's avifauna will likely change again as a result. We document here the status of that avifauna during this transitional period of regrowth, between the island's being largely denuded of vegetation and a more natural state. It is still too early to evaluate the effects of the vegetation's still partial recovery on birds, but the beginnings of recovery may have enabled the recent colonization of small numbers of Grasshopper Sparrows and Lazuli Buntings. Sponsored by the U. S. Navy, efforts to restore the island's endangered species continue—among birds these are the Loggerhead Shrike and Sage Sparrow.

The avifauna of islands presents special opportunites for both birdwatchers and scientists alike. The California Channel Islands are renowned for their unique avifauna, both the islands as a whole and San Clemente Island (SCI) alone. SCI is the southernmost of the Channel Islands (32° 50′ N, 118° 30′ W; Figure 1). It lies 103 km west-northwest of San Diego and 92 km from the nearest point on the mainland (Palos Verdes), although Santa Catalina Island is only 34 km to the north.

Because the Channel Islands vary in their distance to the mainland, their ecologies differ. The theory of island biogeography suggests that immigrants from the mainland are more likely to reach the larger inshore islands (e.g., Santa Cruz and Santa Catalina), so these islands should have avifaunas more

Figure 1. The California Channel Islands. San Clemente is the southermost island, located approximately 90 km off the mainland.

like those of the nearby mainland than should the outlying islands (e.g., San Nicolas and San Clemente) (MacArthur and Wilson 1967, Brown and Gibson 1983). However, the degree of endemism on the Channel Islands is striking (Howell 1917, Diamond 1969, Johnson 1972). Of approximately 41 breeding landbirds on the Channel Islands, 32% (13 species) show effects of insular isolation. Twenty-one endemic subspecies have been described, typically characterized by coloration darker and bills larger than those of their mainland relatives, although the validity of some of these is doubtful or has been disproven (Johnson 1972; Table 1). Only one of the islands' endemic birds is currently ranked as a species, likely because the islands are continental rather than oceanic; that is, they lie too close to the mainland to have followed too independent an evolutionary path.

Of the eight Channel Islands, San Clemente has the most distinctive flora and fauna. Despite its relatively small size (148 km^2, making it the fourth largest of the Channel Islands), SCI is home to a large number of species found only on the Channel Islands or nowhere else. There are or were 56 species or subspecies (19 terrestrial invertebrates, 1 reptile, 7 birds, and 29 plants) known from SCI that are endemic to the Channel Islands and 49 species or subspecies (30 terrestrial invertebrates, 3 birds, 2 mammals, and 14 plants) endemic to SCI alone. San Clemente Island's high level of endemism is likely due to its being more isolated from other land masses than are the other large Channel Islands.

Table 1 Status of Birds Endemic and Nearly Endemic to the Channel Islands and San Clemente Island

Species	Scientific Name	Channel Islands	San Clemente Island
California Quail	Callipepla *californica catalinensis*	Common on Santa Catalina	—
Allen's Hummingbird	*Selasphorus sasin sedentarius* [a]	Common	Common
Pacific-slope Flycatcher	*Empidonax difficilis insulicola*	Common	Common
Loggerhead Shrike	*Lanius ludovicianus anthonyi*	Rare on Santa Catalina/Santa Cruz	—
	Lanius ludovicianus mearnsi	—	Federally Endangered
Hutton's Vireo	*Vireo huttoni unitti*	Uncommon on Santa Catalina	—
Island Scrub Jay	*Aphelocoma insularis*	Common on Santa Cruz	—
Horned Lark	*Eremophila alpestris insularis*	Abundant	Abundant
Bewick's Wren	*Thryomanes bewickii leucophrys*	—	Extinct [c]
	Thryomanes bewickii catalinae [b]	Common on Santa Catalina	—
	Thryomanes bewickii nesophilus [b]	Common on Santa Cruz/Santa Rosa	—
Orange-crowned Warbler	*Vermivora celata sordida* [a]	Common	Common
Spotted Towhee	*Pipilo maculatus clementae*	Common on Santa Catalina	Extirpated
Rufous-crowned Sparrow	*Aimophila ruficeps obscura*	Uncommon on Santa Rosa/SantaCruz/Anacapa	—
Sage Sparrow	*Amphispiza belli clementae* [b]	—	Federally Threatened
Song Sparrow	*Melospiza melodia clementae*[b]	Common on Santa Rosa	Extirpated
	Melospiza melodia graminea	Extirpated on Santa Barbara	—
	Melospiza melodia micronyx [b]	Common on San Miguel	—
House Finch	*Carpodacus mexicanus clementis* [b]	Common	Common

[a] Breeds also on nearby mainland of southern California.

[b] Validity questionable (Phillips 1986, Patten 2001, Patten and Unitt 2002, Kaler and Unitt unpubl. data). Some other subspecies need critical restudy and quantification of their differences as well.

[c] Endemic to San Clemente Island.

SAN CLEMENTE ISLAND GEOLOGY AND GEOGRAPHY

San Clemente Island was formed as the result of volcanic uplifting approximately 12–16 million years ago (Olmstead 1958, Ward and Valensise 1996, Vedder and Howell 1980). Tectonic plate shifting and volcanic action formed the Channel Islands during the early Tertiary Period (Vedder and Howell 1980). It is thought that the northern islands (Anacapa, Santa Cruz, Santa Rosa, San Miguel) were once connected to the mainland, albeit briefly in the context of geologic time. The remaining four islands (Santa Barbara, San Nicolas, Santa Catalina, and San Clemente) have never been connected to another land mass, even when glaciations lowered sea levels (Vedder and Howell 1980).

San Clemente Island is composed predominantly of Miocene andesite and dacite, with some localized marine sedimentary deposits carried up with the island's emergence (Merifield et al. 1971). The island continues to rise at a rate of 20–40 cm per thousand years (Ridlon 1969).

Currently, SCI is 44 km long and 2.4–6.4 km wide, encompassing approximately 14,764 ha (Figure 2). Its elevation ranges from sea level to 599 m. Tectonic activity and climatic changes have been fundamental to the island's evolution (Yatsko 2000). The island consists of a central plateau incised by canyons along the western and eastern slopes (Yatsko 2000; Figure 3). The steep eastern escarpment is the up-thrust edge of the San Clemente Fault, which descends from the plateau to the Pacific Ocean (Figure 4). The west side consists of a series of more gentle marine terraces formed as a result of periodic uplifting and erosion from wave action (Vedder and Howell 1980). These marine terraces are some of the best examples of these features found along the southern California coast (USDoN 2001). SCI also has localized sand dunes and sandy beaches, produced by receding sea levels (Muhs 1980; Figure 5). The varied geologic features result in many habitat types, increasing the diversity of birds found there.

San Clemente is the driest of all the Channel Islands, receiving an average of 15.7 cm of rain per year (Olmstead 1958). Rainfall fluctuates dramtically with cycles of drought and El Niño. Rain falls typically from December to April. Temperatures range from 7° to 29° C, with frequent thick fog and relatively high humidity (67–85%), which may moderate the effects of low rainfall. Typical wind speeds average 6–18 km/hr. Fresh-water sources are limited with most water restricted to natural catchment basins in the bottoms of the larger canyons.

THE FLORA OF SAN CLEMENTE ISLAND

Contributed by Jonathan J. Dunn

The semiarid climate of SCI supports a diverse array of plant communities from seasonally lush oak woodlands (*Quercus tomentella* and *Q. chrysolepis*) to stark stands of cholla cactus (*Opuntia prolifera*) and California boxthorn (*Lycium californicum*) (Figure 6). Aside from the island's endemic taxa, the flora of SCI is an ensemble of native and exotic plants largely similar to that found on the California mainland. There are 435 native and exotic plant species currently known from SCI. Of this total, 295 taxa are con-

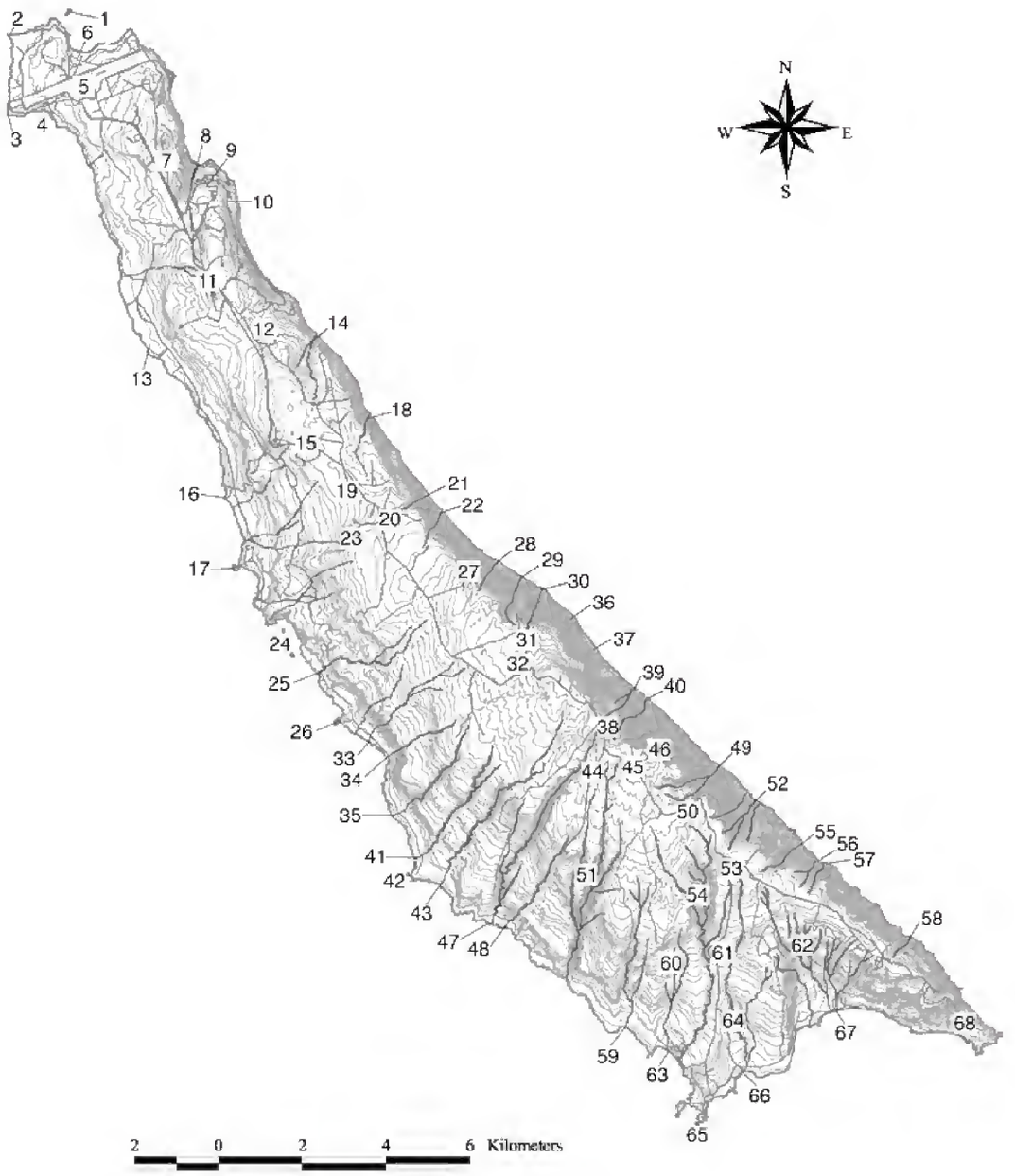

Figure 2. Detail of San Clemente Island, showing major features and sites mentioned in the text. **1,** Bird Rock; **2,** Whale Point; **3,** West Cove Point; **4,** West Cove Beach; **5,** airfield; **6,** Northwest Harbor; **7,** Chad's Bluff; **8,** Wilson Cove Canyon; **9,** Wilson Cove; **10,** Oly Locker; **11,** old nursery; **12,** eucalyptus tree; **13,** West Shore; **14,** Chamish Canyon; **15,** VC3; **16,** Fisherman's Point; **17,** Eel Point; **18,** Larkspur Canyon; **19,** Revetment; **20,** Lemon Tank; **21,** Lemon Tank Canyon; **22,** Tota Canyon; **23,** Bluff; **24,** Seal Cove; **25,** Wallrock Canyon; **26,** Mail Point; **27,** Stone Station; **28,** Burns Canyon; **29,** Horton Canyon; **30,** Twin Dams Canyon; **31,** Twin Dams ponds; **32,** Spanish Curve; **33,** Warren Canyon; **34,** Waynuck Canyon; **35,** Middle Ranch Canyon; **36,** Boulders North; **37,** Boulders South; **38,** Thirst; **39,** Thirst Canyon; **40,** Vista Canyon; **41,** Norton Canyon; **42,** Lost Point; **43,** Box Canyon; **44,** REWS Road; **45,** SHOBA gate/pond; **46,** Vista Overlook; **47,** Horse Canyon; **48,** Chukit Canyon; **49,** Eagle Canyon; **50,** Eagle Curve; **51,** Cave Canyon; **52,** Bryce Canyon; **53,** hazmat fence; **54,** China Canyon (upper); **55,** Mosquito Cove; **56,** Matriarch Canyon; **57,** Canchalagua Canyon; **58,** Knob Canyon; **59,** Kinkipar Canyon; **60,** Red Canyon; **61,** Chalk Curve; **62,** Chenetti Canyon; **63,** China Beach; **64,** Horse Beach Canyon; **65,** China Point; **66,** Horse Beach; **67,** Chenetti Beach/Cove; **68,** Pyramid Point.

Figure 3. Horse Canyon, on San Clemente Island's southwest side; view to the east.

Photo by Jonathan J. Dunn

sidered native; the remaining 140 species are exotic, largely cosmopolitan weeds. Descriptions of the flora of SCI can be found in Trask (1904), Dunkle (1950), Raven (1963), Axelrod (1967), Philbrick (1967), Thorne (1969), Philbrick and Haller (1977), Ferguson (1979), Sward and Cohen (1980), Jorgensen and Ferguson (1984), and Kellogg and Kellogg (1994).

The current status of the flora and plant communities of SCI cannot be understood apart from the enduring effects of 150 years of grazing and agriculture (Figure 7). Exotic species such as *Bromus hordeaceus* (soft chess) and *Atriplex semibaccata* (Australian saltbush) were directly seeded for browse when the island was used for ranching. These, along with similar species, now dominate considerable areas once supporting native plant communities. Overgrazing by unchecked populations of feral goats led to severe erosion of topsoil and the destruction of most of the island's trees (Figure 8).

Six plant species on SCI are currently listed as endangered by the U. S. Fish and Wildlife Service. Several native species were extirpated from the island, such as *Dendromecon harfordii* (island tree poppy), *Senecio flaccidus* var. *douglasii* (Douglas' butterweed), and the annual grass *Dissanthelium californicum*. Other species that one might expect to be common on SCI, such as *Adenostoma fasciculata* (chamise) and *Salvia mellifera* (black sage), are known today only from single localities. Entirely undescribed plant communities may have been lost during the ranching era. Reports from the late 1800s describe groves of malva rosa up to 12 feet tall that stretched for miles

(Raven 1963). This species, the island mallow, *Lavatera assurgentiflora* ssp. *glabra,* is now known to occur naturally in only five locations, totaling fewer than 100 individuals. The ultimate removal of the feral goats in 1993 has relaxed some of the pressure on the native flora. Many species once considered at risk of extirpation, such as *Calystegia macrostegia amplissima* (island morning glory) and *Castilleja grisea* (island paintbrush), have recovered and are thriving. Thus many of the island's plant communities can be considered to be in a period of early successional development following a prolonged period of disturbance.

The plant communities formed by these native taxa are similar to the plant communities historically present along the southern California coast, where they have largely been replaced by development on the mainland. Three vegetation types, maritime desert scrub, maritime sage scrub, and grasslands, account for approximately 90% of the vegetation cover on SCI. These three communities largely typify the vegetation of SCI as low-growing scrublands and grasslands, though native trees over 18 m tall can be found in some of the deep canyons of the west side and along the eastern escarpment.

On the western side of the island, along the coast and steep coastal bluffs, maritime succulent scrub and coastal bluff scrub tend to dominate. These communities are characterized by species tolerant of the ocean spray and the limited soil available along these rocky shores. On SCI, these communities consist of several species of native *Atriplex* (saltbushes), *Bergerocactus emoryi* (snake cactus), *Dudleya virens* (green live-forever), and *Euphorbia misera* (cliff spurge), as well as exotic species such as *Mesembryanthemum crystallinum* (crystalline iceplant). Other plant communities of the immediate coast include relatively small areas of coastal strand and dunes characterized by *Abronia umbellata* and *A. maritima* (sand verbena) and two Channel Island endemic *Astragalus* species, *A. miguelensis* and *A. nevinii* (San Miguel and San Clemente Island milkvetch, respectively). These communities of the immediate coast have survived the ravages of grazing very well and form some of the most species-rich examples of these communities remaining in California.

Farther inland and at higher elevations, maritime desert scrub is the dominant vegetation type. This community occurs primarily along the open western terraces at elevations up to about 480 m. Maritime desert scrub is SCIs most extensive plant community, covering approximately 40% of the island. It is characterized by the dominance of the spiny drought-deciduous California boxthorn, *Opuntia littoralis* and *O. prolifera* (prickly pear and cholla cactuses) (Figure 9), and *Mirabilis californica* (wishbone bush). Much of this community in its mid- to high elevation range suffered considerable disturbance from grazing. In these areas, exotic species such as Australian saltbush and the exotic annual grasses *Bromus madritensis* (red brome), *B. hordeaceus* (soft chess), and *Vulpia myuros* (foxtail fescue) often dominate.

Grasslands constitute just less than 30% of the island's cover. Native grasslands are largely dominated by the perennial tussock-forming species *Nassella pulchra* and *N. cernua* (purple needlegrass and nodding needlegrass), although other native grasses such as *N. lepida* (foothill needlegrass), *Melica imperfecta* (melic), *Agrostis pallens* (bentgrass), and *Poa secunda*

(bluegrass) are often locally common. These grasslands typically occupy the broad flat upper terraces and plateaus and upper portions of the eastern escarpment. Numerous annual and perennial wildflower species are also found in this community. During years of adequate rainfall, grand and colorful showings of lavender *Trifolium* species (clovers) and blue *Lupinus* species (lupines) are followed by oceans of orange *Amsinckia menziesii* (fiddleneck) and purple *Dichelostemma capitatum* (blue dicks) (Figure 10). Exotic annual grasses and forbs often make up a significant amount of cover in this community, most notably in the northern portion of its range. These areas are commonly dominated by *Avena barbata* (slender oat) and *Bromus* species.

Maritime sage scrub is the third most common plant community on SCI and accounts for just less than 20% of the vegetation cover. This community is typified by the presence of *Artemisia californica* (California sagebrush) or its Channel Islands variant *A. nesiotica* (island sagebrush) and a host of other low-growing shrub species including *Eriophyllum nevinii*, *Eriogonum giganteum* (San Clemente Island buckwheat), prickly pear cactus, and island paintbrush. Sometimes referred to as "soft chaparral," this community is found primarily along the steep slopes of canyon walls and the eastern escarpment.

Although chaparral and woodlands may have once been more extensive, they currently make up less than 2% of the island's total vegetation cover. Chaparral is characterized by drought-tolerant evergreen shrubs typically growing to a height of about 2 meters. Substantial stands of chaparral are nonexistent on SCI, but there are indications that shrub cover is increasing. Recruitment of chaparral species such as *Ceanothus megacarpus insularis* (island lilac) and *Rhamnus pirifolia* (island redberry) has been observed in west-side canyons and along the eastern escarpment. Other species common to chaparral persist on the island but have very limited distributions. These include *Malosma laurina* (laurel sumac), which is known from three locations, and *Adenostoma fasciculata* (chamise), so common on the mainland, which is currently known on SCI from a single location. Many biologists have speculated that repeated burning by ranchers to increase grass cover and prolonged overgrazing may have converted sage scrub and chaparral into grasslands. Studies elsewhere in California support this concept and show that this trend is often reversible (Zedler 1995). The dynamic nature of these communities offers the hope that these relictual populations will expand their ranges on the island.

The island's woodlands are of three types: canyon woodlands, dominated by *Prunus lyonii* (Catalina cherry) and *Heteromeles arbutiflora* (toyon), which are found in the larger canyons and drainages; oak woodlands, dominated by *Quercus tomentella* (island oak), which is found primarily along southern portions of the eastern escarpment; and woodlands of ironwood, *Lyonothamnus floribundus asplenifolius*, also found primarily along the rocky slope and canyons of the eastern escarpment. Each of these woodland types supports a diverse assortment of native understory species such as the lily *Triteleia clementina* and the sedge *Carex tumulicola*, but these communities carry a load of exotic competitors as well. Groves of trees were refugia for grazing animals, and exotic species such as *Bromus diandrus* (ripgut

brome) now often dominate these understories. The recovery of woodland species is mixed. Seedlings and saplings of the cherry and toyon are a common sight in most large canyons, while recruitment of the island oak is very limited, and no seedlings of the ironwood have been observed. A number of other plant communities, including coastal salt marsh and seasonal wetlands, account for a small percentage of the native plant cover on SCI and though small in total area are notable as valuable resources for wildlife.

The greatest threats to the island's existing native plant communities include the continuing loss of soil through erosion, the unnatural frequency of fire resulting from bombing by the U. S. Navy (most notable on the southwestern portion of the island), the development of new training facilities, and the invasion of exotic pest plant species. Most of these factors can be mitigated through prudent planning, but preventing the immigration of invasive plant species deserves diligent attention. The invasion of exotic pest plants can devastate islands, and several undesirable species such as *Foeniculum vulgare* (fennel), *Piptatherum miliaceum* (smilo grass), and *Ehrharta calycina* (veldt grass) have gained access to SCI. Fortunately, the navy has developed a program to monitor and treat these pest plants carefully. The goal of this program is the ultimate eradication of the existing populations and the ongoing prevention of infestation.

Although historical information is limited, the future for native plant communities on SCI can be projected to some degree. Left to successional processes, shrublands will likely continue to increase. Chaparral may eventually replace grassland and sage scrub in areas where soil and slope aspect are favorable, as attested by the natural recruitment of such species as island redberry and island lilac. This community could eventually account for as much as 10% of the native cover. Maritime desert scrub and sage scrub cover will likely increase in density as well as in range. Once rare, seedlings of the California sagebrush have become a common sight. Strong recruitment has also been noted for the Catalina cherry. Canyon woodlands and chaparral could eventually approach a closed canopy in some of the larger drainages. But little or no recruitment has been recorded for many important species, and successional changes require time. The animals that depend on these communities may not be able to wait for natural recovery. The reduction of shrub cover by feral grazers has resulted in a net loss of shelter available to animals, a decline in habitat diversity, and hastened soil erosion. To improve habitat quality and increase the rate of succession, the navy has initiated a program for restoring native habitat. This program includes collection and storage of native seeds, a greenhouse and nursery for the propagated plants, and the planting and temporary maintenance of native shrub species throughout the island.

EFFECT OF HUMANS ON SAN CLEMENTE ISLAND'S FLORA AND FAUNA

Early Inhabitants

Archaeological remains on SCI represent 10,000 years of cultural change, one of the longest and best-dated sequences in North America (Meighan 2000). From present archaeological findings, it appears that there were times

when the island was essentially uninhabited perhaps for centuries, yet there were periods when favorable conditions resulted in surges of population growth (Meighan 2000).

The earliest aboriginal inhabitants, thought to be of Chumash affinities from their tools, burial sites, and dwellings, first inhabited SCI ~10,000 years ago (Salls 1988). These people were descendants of the tribes from the northern Channel Islands and California coast (Schoenherr et al. 1999). They were good with boats and traveled easily among the islands, gaining their subsistence from the marine environment (Bruce 1994). They relied on food from tidepools, especially abalone (*Haliotis* spp.), California Sheephead (*Semicossyphus pulcher*), and pinnipeds (Yatsko 2000), although they also apparently exploited some terrestrial resources such as acorns, Catalina cherries, and nesting seabirds. The dearth of fresh water likely limited the human population to approximately 100 people.

Following the Chumash were a group known as the Gabrielinos (Yatsko 2000). These people are thought to be descendants of tribes located in the Great Basin and Mojave Desert regions (Schoenherr et al. 1999) who adapted to island life. They were the natives living on the island when the Spanish first arrived.

European Explorers

There is some dispute over which explorer actually found and named SCI (Bruce 1994). Juan Rodriguez Cabrillo is given credit for the discovery of SCI before his landing in San Diego in 1542 (Daily 1987). It is thought that Cabrillo named the island La Victoria, then Sebastian Vizcaino renamed it San Clemente in 1602 (Daily 1987). Some scholars hypothesize that neither Cabrillo nor Vizcaino ever landed on SCI, so that the first landing by a Spaniard was by Juan Perez in 1769 (Bruce 1994).

The greatest human use of the island likely occurred between 1769 and 1829. During this period, the Gabrielinos continued to occupy the island, and Russian, Spanish, and American otter hunters also visited. These hunters not only decimated the Sea Otters (*Enhydra lutris*) around SCI, they affected the native people as well. It is believed that the Gabrielinos died out or departed the island by the late 1820s to protect themselves from the murderous assaults of the foreign hunters. Baptism records suggest that most of the Gabrielinos had left SCI for Mission San Gabriel by 1829 (Johnson 1988). SCI appears to have been uninhabited from 1829 to 1864.

SCI became property of the United States Department of Commerce after the Treaty of Guadalupe Hidalgo ending the Mexican-American War in 1848. In 1864, during the Civil War, the island was occupied by the 4th Infantry of the California Union Volunteers and used intermittently by smugglers and abalone fishermen (Raab and Salls 1991). After the 1855 "China Boy" Act, prohibiting Chinese immigration into California, the island became a staging ground for ships smuggling Chinese into California. The smuggling and abalone industries faded out in the late 1890s.

Ranching Era

Both legal and illegal ranching occurred between 1850 and 1934, although it is believed that the Spanish missionaries brought the first sheep

to the island. Eventually the SCI Wool Company received sole rights to graze SCI, beginning operations in 1864. SCI was considered good ranch land despite the lack of fresh water because it allowed less management of the herd and was free from predators (Andrew 1998). By the late 1800s there were between 8000 and 40,000 sheep, 3000 goats (used for herding the sheep), and 1000 cattle roaming the island (Johnson 1975). By 1906, official land leases were established, and development and overgrazing began to degrade the island's habitats severely. Between 1909 and 1922, a program to seed exotic annual grasses and saltbush began, and there is evidence that sheep ranchers burned large parts of the island to increase forage for their herds (Andrew 1998). These fires increased grass and forb cover and reduced shrub cover.

Ranching had profound effects on habitats across the island. In general, sheep and goat grazing reduced vegetative cover, plant diversity, productivity, and plant vigor (Coblentz 1980). These effects were worsened by the fact that sheep overgrazed the plateaus, while goats grazed in the canyons (Keegan et al. 1994). Thus few areas of the island were spared. The degradation of the island intensified from 1923 to 1934 when modern roads were built, providing increased access to most of the island.

Ranchers also introduced feral cats (*Felis catus*) and Black Rats (*Rattus rattus*). The effect of introduced feral cats and rats on island faunas is well documented, as they disrupt natural food chains and are predators of birds and their nests (Veitch and Clout 2002). Island wildlife is especially vulnerable to exotic invaders because islands generally have few if any mammalian predators. Species evolving on islands have few defenses against introduced predators and no natural immunities to introduced diseases (Loope et al. 1988).

The Rise of the Navy

In 1934, under an executive order by President Franklin D. Roosevelt, the U. S. Department of the Navy took control of the island. At this time, the SCI Wool Company was ordered to remove all livestock from the island. Unfortunately, many goats were left behind, and the goat population skyrocketed to approximately 20,000 animals in the 1970s (P. D. Jorgensen pers comm.). During this time, goats foraged throughout the island and there was essentially no reproduction of woody plants. Furthering the problem with feral animals, the California Department of Fish and Game introduced pigs (*Sus scrofa*) to the island in 1951.

The navy was interested in SCI because it provided a remote location where intensive training on a large scale could be conducted. In 1935, a pier was built at Wilson Cove, and the first bombing runs were conducted. In 1937, 4700 troops landed on the shores of SCI, the first of this type of exercise. During World War II, aerial bombing training intensified, and the first airstrip was built on the central plateau. By 1951, underwater demolition training had begun. All of these activities necessitated the need for living quarters, and in 1958 barracks were built at Wilson Cove.

Subsequently, the navy has continued to operate the island as a training range. Specifically, the current mission of the navy on SCI is to support tactical training, research and development, and evaluation trials by maintaining and operating facilities and providing services, arms, and material support

to the U. S. Pacific Fleet (USDoN 2001). SCI represents the only military range in the Pacific Ocean where sea, land, and air units can train for battle simultaneously. SCI is the primary maritime training area for battle group and ship deployment (including ship-to-shore and aerial bombardment), amphibious training for the U. S. Marine Corps, and naval special warfare training (navy Seals). For these reasons, public access to the island is limited.

AVIFAUNAL HISTORY OF SAN CLEMENTE ISLAND

Prehistory

Despite the wealth of archaeological artifacts on SCI (Yatsko 1989), there are only a few documented prehistoric remains of birds. The remains that are known indicate the island's early inhabitants used birds for food, tools, and ceremony. Archaeological evidence from Eel Point suggests that early inhabitants hunted several bird species during the middle Holocene (~3700 years before present), especially during the winter when other resources such as pinnipeds were scarce (Porcasi 1999a). This site contained 1549 bird bones, of which 30% (469) were identified to family, genus, and/or species. Of the 15 species identified (Table 2), 12 were seabirds and 3 were terrestrial (Porcasi 1999a). In one deposit, 187 bones of the Short-tailed Albatross (*Phoebastria albatrus*) were found, comprising at least 8 individuals (Porcasi 1999b).

Other evidence from near Lemon Tank suggests the use of birds for ceremonies (Hale 1995). Found at this site were the skeletons of five Red-tailed Hawks (*Buteo jamaicensis*), two Peregrine Falcons (*Falco peregrinus*), and one Common Raven (*Corvus corax*) (Hale 1995). All birds were immatures buried vertically, head down, ~20–54 cm deep. Hale (1995) speculated that these birds were buried as part of death and mourning ceremonies. Raptors and ravens may have been used in a memorial ritual for chiefs, as were eagles and condors on the mainland. It is believed that people watched raptor nests, took young birds from the nest before fledging, and kept them in cages. The purpose of the death and burial of these birds was to carry messages to the dead (Hale 1995).

The only other known avian remains are from a cave at the northern tip of the island where bones of Cassin's Auklet (*Ptychoramphus aleuticus*) were found and dated to an age of about 6000 years (Foley 1987). It is unclear whether these remains were from a human food cache or a nesting location by these cavity nesters. However, the accessibility of the cave and the presence of the Island Fox (*Urocyon littoralis clementae*) make it unlikely these birds nested here. Furthermore, Foley (1987) found awls made of bird bones in this cave, the only evidence suggesting that early inhabitants also used bird bone to make tools.

Modern History

Early ornithologists were quite interested in the Channel Islands and SCI. During modern history, there were periods of exploration and collecting (especially of egg sets) followed by periods of little work. Because the bird populations on SCI were severely affected by human activities it is important

Table 2 Birds Reported in Prehistoric Osseous Remains from Eel Point, San Clemente Island[a]

Species	Number
Unidentified loon	3
Common Loon	7
Red-necked Grebe	2
Unidentified albatross	210
Short-tailed Albatross	8
Northern Fulmar	63
Unidentified shearwater	12
Buller's Shearwater	3
Pink-footed Shearwater	10
Short-tailed Shearwater	2
Unidentified pelican	8
Unidentfied cormorant	20
Double-crested Cormorant	37
Unidentified goose	1
Red-tailed Hawk	1
Unidentified gull	33
California Gull	1
Heermann's Gull	2
Rhinoceros Auklet	2
Cassin's Auklet	34
American Crow	1
Common Raven	9
Unidentified bird	1080
Total	1549

[a]Source: Porcasi (1999a).

to assess the records by all ornithologists over time, so that we can piece together the bird community's change over time.

1860–1920. John G. Cooper (1870) conducted the first documented bird surveys on SCI, in 1863. Other noteworthy early visitors included C. H. Townsend in 1888 and 1889, E. A. Mearns and A. W. Anthony in 1894, Grinnell (1897a), Breninger (1904), Linton (1908, 1909), and Howell (1917). Highlights during this period include the first description of many San Clemente and Channel Island endemic subspecies. Townsend (1890) described the San Clemente Song Sparrow (*Melospiza melodia clementae*), Dusky Orange-crowned Warbler (*Vermivora celata sordida*), and Island Horned Lark (*Eremophila alpestris insularis*). Mearns (1898) described the San Clemente House Finch (*Carpodacus mexicanus clementis*) after visiting SCI in August 1894. Anthony (1895), on the same trip with Mearns, collected and described the San Clemente Bewick's Wren (*Thryomanes bewickii leucophrys*). After a collecting trip in March 1897, Grinnell (1897b) described the San Clemente Spotted Towhee (*Pipilo maculatus clementae*) as a new species, stating that this rare and elusive bird differed from mainland towhees in song as well as morphologically. On the

basis of specimens collected by Townsend, Ridgway (1898) described the Sage Sparrow *Amphispiza belli clementeae* as larger than the mainland subspecies *A. b. belli* but soon reversed himself, saying the difference was insignificant (Ridgway 1901). Later, from specimens collected by Mearns, Ridgway (1903) described the San Clemente Island subspecies of the Loggerhead Shrike (*Lanius ludovicianus mearnsi*).

Breninger (1904) and Linton (1908, 1909) also visited the island, and Howell (1917) summarized all records up to that point, reporting 114 species from SCI.

1921–1967. During this period, few ornithologists surveyed SCI. Between 1928 and 1931, J. R. Pemberton and A. J. van Rossem made trips both together and separately (Pemberton 1931). In 1935, Miller (1936) explored the ocean off SCI looking for pelagic species, but he never landed on the island. Unfortunately, there are few records between 1941 and 1968, and during this period several species were apparently extirpated (Jorgensen and Ferguson 1984). Thus we have lost critical information regarding the details of extirpation on SCI.

1968–1985. Consistent surveys resumed in 1968, including visits by M. L. Cody and J.M. Diamond (unpubl. notes), Jones and Diamond (1976), and Jorgensen and Ferguson (1984). Many of these biologists were interested in turnover of breeding species, although they also recorded more information on migrants than had been noted previously. By 1984, 248 species had been recorded (Jorgensen and Ferguson 1984). This large increase is likely a direct result of increased frequency of visits by ornithologists and more attention paid to nonresidents.

1985–present. Recent bird records come primarily from visiting biologists working on the recovery of endangered species, most notably the San Clemente Loggerhead Shrike and Sage Sparrow. The data generated by these biologists represent the most intensive efforts to document new island records and changes in abundance on SCI. Year-round study enables us to describe the changes in seasonal and breeding bird communities. Diamond and Jones (1980) estimated that the turnover rate on SCI was about 2.4% per year. However, they noted that the frequency of surveys (about every 10 years) was too long to track population changes, as some species' populations might die out and recolonize between census intervals.

CURRENT CONSERVATION EFFORTS

The Department of Defense has always had environmental policies regarding the responsible use of its resources, although how strictly they were followed is questionable. However, in response to amendments to the Sikes Act in 1997, the environmental awareness of the military was heightened. This act stipulates that the Department of Defense must manage its natural resources so that each installation complies with all environmental regulations (e.g., Clean Water, Clean Air, Endangered Species, Migratory Bird Treaty, and National Environmental Policy acts).

The U. S. Navy has a program to conserve natural and cultural resources on the island, managed by its Natural Resources Office. Some of its projects include the research and excavation of archeological sites, the preserva-

tion and restoration of native plant communities, and the monitoring and recovery of sensitive species: the Island Fox, Island Night-Lizard (*Xantusia riversiana reticulata*), Snowy Plover, San Clemente Sage Sparrow, and San Clemente Loggerhead Shrike.

Feral Grazer and Exotic Animal Removal Program

Feral grazers and nonnative predators released on islands often have severe detrimental effects on the island's vegetation and native wildlife. In 1972, the navy began eliminating goats and pigs from SCI, a task completed in 1993. The program resulted in the removal of ~28,000 goats and 2200 pigs (USDoN 2001).

Today, the feral cat is the largest exotic mammal remaining on the island, although the Black Rat and House Mouse (*Mus musculus*) persist also. Feral cats and rats are the targets of continuing removal programs started in 1991. Cats are removed through hunting and trapping, whereas rats are controlled with poison and trapping (USDoN 2001). The navy has a policy of no pets on SCI, but many cats are cared for by island personnel. The cats near barracks began to act as a source population replenishing the rest of the island (Cooper et al. 2003). In 2002, the navy instituted a program whereby cats currently considered "pets" were spayed and neutered to prevent uncontrolled breeding (Cooper et al. 2003); all others are subject to removal.

BIRDING SAN CLEMENTE ISLAND

San Clemente Island's position, roughly 100 km off the coast of southern California, south and east of Point Conception, allows large numbers of landbirds to encounter the island during fall migration. This hypothesis, put forth by Miller (1936), has been supported by our observations. The island is less apt to attract landbirds in spring, when large numbers fall out under optimal conditions only.

Spring Migration

Spring migration typically starts during the last half of February, when small movements of northbound seabirds and landbirds are observed, and continues through mid- or late June, as the latest northbound landbirds and seabirds overlap with the earliest fall migrants. During spring, when light southeast winds prevail during the night, thousands of migrant landbirds moving north up the coast of Mexico may find themselves over the ocean at daybreak. Under these conditions, often accompanied by a mid-level marine layer, spectacular numbers of migrants may occur. These flights typically comprise common west-coast migrants such as Wilson's Warbler, Western Tanager, Lazuli Bunting, Black-headed Grosbeak, and Bullock's Oriole. The largest fall-outs documented on SCI have occurred in spring, typically in late April and early May.

Fall Migration

Fall migration, less dramatic than spring migration, can best be described

as steady and protracted. It begins in late June with southbound shorebirds and ends in late December with waterfowl and seabirds. The weather conditions that bring migrants to SCI during fall are less fickle than those of spring, and migrants can abound during a variety of weather patterns. The best weather for observing fall migrants is similar to that required during spring, except during fall the northeasterly winds of Santa Ana conditions are the best for bringing large numbers of landbirds to SCI. Some birds arrive in exhausted condition, and it is likely that many do not survive.

Seawatching

The west shore of SCI seems more productive for seawatching than the east, although we have spent less time on the latter. Two promontories, China Point and West Cove Point, are the best locations for observing seabird migration throughout the year. In fall, West Cove Point, at the northwest tip of the island, lies in the path of southbound migrant seabirds, which round the point when they encounter the north end of the island. During spring, China Point, at the southwest tip of SCI, concentrates northbound birds.

Landbirding

Finding migrant landbirds on SCI is relatively easy because of the sparseness of the island's vegetative cover. When birds stop on SCI, they find little hospitable vegetation and tend to concentrate at Lemon Tank (Figure 11), the only source of fresh water on the island, and in the wooded canyons where standing water may remain in pools. Isolated stands of lemonadeberry (*Rhus integrifolia*) and *Baccharis* can also concentrate migrants, even if water is not present. Some species prefer the dry upland grass and shrublands.

METHODS

Since 1993, bird sightings reported by biologists and visiting ornithologists have been archived by PRBO Conservation Science, then transferred into an electronic database, from which we wrote the bulk of the species accounts. We consulted all major resources on the birds of San Clemente Island. Howell (1917) summarized the notes and records of all prior visiting ornithologists, and Jorgensen and Ferguson (1984) compiled ornithological data through 1983. H. Lee Jones and Paul Collins have contributed much to the SCI data set, as well as to that of all of the California Channel Islands. They graciously allowed us access to their data for all the islands, allowing us to put records of rare birds on SCI into a broader context. We searched through historic literature for records of birds on SCI and also included personal observations provided to us by birders who have visited the island.

As of 1 January 2005, 352 species of birds had been reported from SCI. Of these, 317 have been documented acceptably with specimens, photos, or written descriptions, whereas 31 species are treated as being of hypothetical occurrence (see below under Hypothetical Species). The species included as hypothetical are those that require more than a sight record for documentation, as determined by their previous occurrence in California, especially on the Channel Islands. Three species are of exotic origin, and one is known only from prehistoric remains.

Included among the 317 bird species documented from SCI are many records of rare and unusual birds. Documentation in the form of photos has been catalogued and maintained by Sullivan, when possible, for all records of birds on the review list of the California Bird Records Committee (CBRC), as well as for birds rare on the Channel Islands.

Observers contributing substantially to the database or cited in the species accounts are as follows: Paul A. Aigner (PAA), Lindsay A. Armer (LAA), Fred Beaudry (FB), Ashleigh V. Blackford (AVB), D. Bleitz-Sandburg (DB-S), Melissa A. Booker (MAB), Laura A. Bringhurst (LAB), John T. Brollini (JTB), Don L. Brubaker (DLB), Christopher W. Burney (CWB), Larry R. Butcher, Phillip R. Butler (PRB), Kurt F. Campbell (KFC), Eugene A. Cardiff (EAC), Heather A. Carlisle (HAC), Lilly S. Cesh, Neil A. Chartier, Henry Childs (HC), William Clow (WC), Martin L. Cody (MLC), Robert Cohen (RC), Anne M. Condon (AMC), Daniel S. Cooper, Douglass M. Cooper (DMC), Elizabeth Copper (EC), J. C. Couffer (JCC), Christina L. Couroux (CLC), Angela Coxon (AC), Clem L. Dabrowski (CLD), Ryan T. DeGaudio (RTDeG), Robert G. Dempsey (RGD), Jennifer A. Dhundale (JAD), Jared M. Diamond (JMD), Denise K. Dixon (DKD), Jonathan L. Dunn (JLD), Jonathan J. Dunn (JJD), Charles Eldermire (CE), Richard A. Erickson, William T. Everett (WTE), Wendy M. Fair (WMF), Josephine Fields Falcone (JFF), Howard L. Ferguson (HLF), Sean P. Finn (SPF), Brian Foster, David K. Garcelon (DKG), Kimball L. Garrett (KLG), Brian Gibbons (BG), Jan H. Goerrissen (JHG), Ann M. Graham (AMG), William E. Haas (WEH), Tonya M. Haff (TMH), Chuck Hayes (CH), Shane Heath (SH), Carrie K. Hisaoka, David J. Hof (DJH), Jennifer N. Hoffman, Melanie Howe (MH), Ken M. Hyde (KMH), John James (JJ), Joseph R. Jehl, Jr. (JRJ), Barry Jones (BJ), H. Lee Jones (HLJ), Paul D. Jorgensen (PDJ), Frans A. Juola (FAJ), Robb S. A. Kaler (RSAK), Corey O. Kanuckel (COK), Jheremie L. Kelerman (JLK), Eric L. Kershner (ELK), Sean J. Kiffe (SJK), Cathy E. Koehler (CEK), C. Robby Kohley (CRK), Julie Lambert (JL), Jan Larson (JLr), Julian Lee (JLe), Eric Leist (EL), Tony R. Leukering (TRL), Cecilia M. Leumas (CML), Suellen Lynn (SL), Tracey R. Mader (TRM), John A. Martin (JAM), Guy McCaskie (GMcC), Jimmy M. McMorran (JMMcM), Robert D. McMorran (RDMcM), Karly J. Moore (KJM), Nicole M. Munkwitz (NMM), Samantha L. Musgrave (SLM), Zach J. Nelson (ZJN), Paul Opler (PO), William A. Ostheimer, Robert T. Patton (RTP), Mark T. Philippart (MTP), Robert L. Pitman (RLP), Jonathan H. Plissner (JHP), Chris J. Raal (CJR), Isabelle Robichaud (IR), Bruce J. Rodrigues (BJR), Jane K. Rombouts (JKR), Ryan S. Rummelhart (RSR), Thom as A. Scott (TAS), Mary K. Stapleton (MKS), Robert Stewart (RS), Khara M. Strum (KMS), Sam W. Stuart (SWS), Brian L. Sullivan (BLS), Christina L. Sulzman (CLS), Jennifer M. Turner (JMT), Philip Unitt (PU), Eric A. Urban (EAU), Kathy Wakelee (KW), Sarah E. Warner (SEW), Nils Warnock (NW), Leah H. Webb (LHW), Richard E. Webster (REW), Jeff M. Wells (JMW), Ryan D. Wilds, Thad J. Williams (TJW).

Museum collections containing specimens cited in the species accounts are the Field Museum of Natural History, Chicago (FMNH), Natural History Museum of Los Angeles County (LACNHM), Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts (MCZ), Museum of Vertebrate Zoology, University of California, Berkeley (MVZ), San Diego

Natural History Museum (SDNHM), University of California, Los Angeles (UCLA), and National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

Status Codes and Symbols

Status codes, modified slightly from Jorgensen and Ferguson (1984), represent each species' general status on SCI. Dates and locations are listed for casual species with five or fewer records in a season. The following symbols encode the level of documentation for each species on SCI: †, supported by a specimen; *, supported with a photograph or videotape; #, supported by written details.

The following terms designating abundance have been kept flexible so that they more accurately portray relative abundance by species:

Abundant: Always encountered in very large numbers (at least several hundred per day).

Common: Always or almost always encountered daily, usually in moderate to large numbers.

Fairly common: Usually encountered daily, generally not in large numbers.

Uncommon: Occurs in small numbers and may be missed on a substantial number of days.

Rare: Occurs (or probably occurs) annually in very small numbers.

Very rare: Averages about one record annually, but not necessarily recorded every year.

Casual: One or a few records, but thought to be a likely candidate to occur again within a few years.

Accidental: One record, and future records thought to be unlikely for many years.

SPECIES ACCOUNTS

Anatidae

Greater White-fronted Goose (*Anser albifrons*).†* Rare fall migrant and winter visitor. Thirteen records involving at least 80 individuals, 24 Sep to 7 Feb. High counts of 14 at Boulders South 3 Oct 1996, 12 at Wilson Cove 10–21 Oct 1996 (MAB, MKS), and 12 at Lemon Tank 3 Oct to 15 Nov 2002 (BLS et al; Figure 12). Records typically involve small flocks or pairs. All records are from 1995, 1996, 2000, and 2002, suggesting that the species occurs only sporadically. Garrett and Dunn (1981) considered this species rare along the coast in southern California and suggested a decline from levels of historical occurrence on the Channel Islands and along the southern California coast. However, this species appears to have never been common or even of regular occurrence on SCI.

Ross's Goose (*Chen rossii*). Accidental. One record: a single emaciated bird at the missile-impact area near Lemon Tank 26 Jan 1998 (JAM, SL); it remained for several days and then likely expired, although its remains were not located. This species is found rarely but annually along the coast of southern California (Garrett and Dunn 1981, Small 1994). There are only two other records for the Channel Islands, one each for Santa Cruz and Santa Catalina (Jones and Collins unpubl. data).

Cackling Goose (*Branta hutchinsii*).†* Casual fall migrant and winter visitor. Three

records. One bird was at Oly Locker 23 Dec 1996–19 Jan 1997 (JJ). Two were at Chad's Bluff 26 Oct 2001 (JTB, BLS; Figure 13); they then presumably separated, and one was found at Lemon Tank 30 Oct–7 Nov 2001 (JTB et al.); the other was found dead in Wilson Cove 7 Nov 2001. Two were at Lemon Tank 24 Oct–15 Nov 2002 (ELK et al.). The bird found dead in Wilson Cove 7 Nov 2001 was *B. h. leucopareia* (LACNHM 111805); the remaining individuals were not identified to subspecies. There are five other records of Cackling/Canada Geese unidentified to (sub)species 14 Oct–19 Jan.

Although the Canada Goose (*Branta canadensis*) is locally common in southern California (Garrett and Dunn 1981), Cackling or Canada Geese are of only casual occurrence on the Channel Islands, where they have been recorded on all the islands except Anacapa (Jones and Collins unpubl. data).

Brant (*Branta bernicla*). Rare migrant. Recorded in spring from 27 Feb to 27 May and in fall from 4 Nov to 17 Dec. The spring high count is of 584 moving past China Point on the morning of 10 April 2004 (SWS et al.). The fall high count is of 650 migrating past West Cove Point on 4 Nov 2001 (BLS). This species' appearance on SCI is likely due to local weather patterns, as it usually occurs in large numbers when present. Garrett and Dunn (1981) suggested that the fall passage of this species occurs well offshore, as there are few records from coastal promontories during that season. Perhaps light winds, the conditions under which Brant have occurred during fall on SCI, allow the birds to drift nearer the islands. Spring migrants have been noted in numbers on SCI during southeasterly winds, suggesting a wind-borne dispersal seaward of flocks that may otherwise pass nearer the mainland coast. Most are recorded in flight off West Cove and China points. All records are of the Black Brant (*B. b. nigricans*), the first 13 Apr 1973 (PDJ).

Gadwall (*Anas strepera*). Casual spring migrant. Two records, both from Lemon Tank: a single male 28 Apr 2001 (RTP) and a male and female 13 Apr 2002 (BLS, AMC). Although this species is common in southern California (Garrett and Dunn 1981), likely it and other dabbling waterfowl do not venture far offshore. There are only 10 records for the Channel Islands, all from the southern islands (Jones and Collins unpubl. data).

American Wigeon (*Anas americana*). Very rare fall migrant. Nine fall records from 22 Sep to 15 Nov. One winter record, of a female at Lemon Tank 2–27 Dec 2004 (JMMcM). First recorded 22 Sep 1976 (HLJ). The American Wigeon is an occasional winter visitant on Santa Rosa and Santa Catalina islands and a fall transient on San Nicolas and Santa Cruz (Jones and Collins unpubl. data). Only one of the records from SCI is more recent than 1984.

Mallard (*Anas platyrhychos*). Rare fall migrant and winter visitor; casual spring migrant and summer visitor. Recorded primarily 7 Oct–24 Feb. There are five spring records: one male at Lemon Tank 21–23 Apr 1981 (WTE), a male and female at Lemon Tank 9–13 Apr 2002 (BLS, AMC), one male in the ponds near SHOBA gate 20–29 Apr 2003 (BLS, RSAK), one female at Twin Dams 18–23 May 2003 (BLS, RSAK), and a male and female at Lemon Tank 1–22 Mar 2004 (BLS et al.). The single summer record is of a female at Lemon Tank 29 June 2004 (BLS). The three February records might pertain to migrants. Garrett and Dunn (1981) and Small (1994) both treated the Mallard as a rare migrant and winter visitor throughout the remaining Channel Islands.

Blue-winged Teal (*Anas discors*).* Casual migrant. Five records: one male 19 Mar 1979 (PDJ), one at Lemon Tank 9 Oct 2000 (CWB), one male at the SHOBA gate pond 30 Mar 2001 (BLS, JTB), three females at Lemon Tank 29 Sep–11 Oct 2003 (RGD et al.), and one female at Lemon Tank 24 June 2004 (SWS et al., photo JMMcM). Four unidentified teal at Chenetti Beach 22 Sept 2001 were likely this species (BLS,

JTB). Garrett and Dunn (1981) cited six records for the Channel Islands (presumably including the 19 Mar 1979 record from SCI), five of which are from spring. Jones and Collins (unpubl. data) consider the species an occasional winter visitor recorded on all the larger Channel Islands. The difficulty of distinguishing the Blue-winged from the Cinnamon Teal in fall plumage may explain the paucity of fall records. An increase in this species' numbers in coastal southern California in recent years might explain the preponderance of recent fall records (P. A. Ginsburg pers. comm.).

Cinnamon Teal (*Anas cyanoptera*).* Rare spring migrant; casual in fall. Recorded in spring from 20 Jan to 3 May and in fall from 8 Aug to 8 Oct. The high count is of four, two males and two females, flying past China Point 3 Oct 2004 (BLS). A female reported 21 Oct 1995 lacks the details required to support such a late date. The Cinnamon Teal may be rarer than formerly, as there are only 10 records over the last 10 years. It is an uncommon to fairly common transient on the remaining Channel Islands (Garrett and Dunn 1981).

Northern Shoveler (*Anas clypeata*). Casual spring and fall migrant. Four records: two females 13 and 21 Oct 1978 (PDJ), one male at Lemon Tank 13 Apr 2002 (BLS, AMC), one male at Lemon Tank 17 Mar 2004 (SWS et al.), and one female at Lemon Tank 19 June 2004 (LAA). Small (1994) mentioned records for both Santa Cruz and Santa Rosa islands. Jones and Collins (unpubl. data) consider the species an occasional fall transient and infrequent winter visitor to Santa Catalina and San Nicolas islands.

Northern Pintail (*Anas acuta*). Rare migrant. Recorded in spring from 9 Jan to 2 Mar and in fall from 19 Aug to 12 Nov. More frequent than other dabblers on SCI, likely because of its propensity to migrate over open water. Individuals sometimes stay for long periods, such as the three that spent six weeks at Lemon Tank in autumn 2001. The high count is of 13 at the pond near REWS Road 18 Feb 1997 (SL et al.). Flocks have been noted over the other Channel Islands, as well as at sea (Garrett and Dunn 1981).

Green-winged Teal (*Anas crecca*).* Rare fall migrant and winter visitor; casual in spring. Recorded from 19 Aug through 24 Feb, except for the single spring record, of one male in a small pond near Middle Ranch Canyon 20 Mar 2003 (BLS et al.). A male intergrade between the North American subspecies *A. c. carolinensis* and the Eurasian subspecies *A. c. crecca* was at Lemon Tank 9–24 Jan 2003 and 5–17 Oct 2003 (possibly the same individual). Two female Green-winged Teal with this apparent hybrid could not be identified to subspecies. Although this species is categorized as an uncommon winter visitant to the Channel Islands (Garrett and Dunn 1981, Small 1994), our data suggest it is perhaps rarer on SCI than on the other Channel Islands, possibly because of the dearth of fresh water and lack of estuaries.

Ring-necked Duck (*Aythya collaris*).* Casual fall migrant. Four records: one on 8 Oct 1980 (GMcC et al.), two at Lemon Tank 9 Oct 2000 (FB, CWB), up to three at Lemon Tank 3 Oct–18 Nov 2001 (BLS et al.), and one male at Lemon Tank 13–14 Nov 2003 (JL et al.; Figure 14). This species is a rare visitant to Santa Catalina Island's Thompson Reservoir and a casual transient throughout the remaining Channel Islands (Garrett and Dunn 1981, Small 1994, Jones and Collins unpubl. data).

Lesser Scaup (*Aythya affinis*).* Casual fall migrant. There are seven records of 14 individuals from 5 Oct to 18 Nov. The high count is of eight flying south off West Cove Point 4 Nov 2001 (BLS, AMC). The Lesser Scaup is a rare visitor to the other Channel Islands (Garrett and Dunn 1981) but is apparently encountered more frequently on Santa Catalina Island (Small 1994). It has been reported from five Channel Islands thus far (Jones and Collins unpubl. data).

Surf Scoter (*Melanitta perspicillata*). Uncommon migrant; casual winter and

summer visitor. Recorded primarily in spring from 19 Mar to 11 Apr, exceptionally as late as 30 Apr (Jorgensen and Ferguson 1984), and in fall from 7 Oct to 27 Dec. The high count of 40 from West Cove Point was made 29 Mar 2001 during the period of peak northbound migration (BLS). Two summer records: one female at Northwest Harbor 23–24 Aug 1996 (RTP); one off Northwest Harbor 19 Jun 1997 (JHG). Three winter records: one in Wilson Cove 20 Jan 1997 (JHG, MAB), one female off Chenetti Beach 13 Jan 2002 (BLS), and one off West Cove Point 22 Feb 2004 (SWS). Although Garrett and Dunn (1981) described the Surf Scoter as common around the northern Channel Islands and less common around the southern islands, we saw it regularly during migration, though rarely a wintering bird.

Common Goldeneye (*Bucephala clangula*). Casual winter visitor. Three records: up to 12 individuals wintered in West Cove from 16 Dec 1998 to 19 Feb 1999 (JAM et al.), one male was in West Cove 4–7 Jan 2003 (BLS, JTB), and a male, possibly returning, was in West Cove 27 Jan–26 Feb 2004 (ELK et al.). This species is generally rare along the coast of southern California (Garrett and Dunn 1981), and Jones and Collins (unpubl. data) have only five other records for the Channel Islands.

Red-breasted Merganser (*Mergus serrator*). Uncommon fall migrant and winter visitor. Recorded from 4 Oct to 11 Apr. Can be found sparingly during the fall and winter months as migrants pass coastal vantage points, and as a winter resident at Pyramid Point. After the Surf Scoter, this species is the diving duck most frequently encountered around SCI. It is common along the coast of southern California (Garrett and Dunn 1981) but partial to inshore waters, perhaps explaining the relatively low numbers recorded annually around SCI.

Ruddy Duck (*Oxyura jamaicensis*).* Rare fall migrant and winter visitor. There are 14 records involving 23 individuals between 24 Aug and 13 Apr. Spring status unclear. Five birds first discovered at Twin Dams 10 Mar 1997 stayed at least through 13 Apr, suggesting that they had spent the winter. This record also represents the island's high count. Garrett and Dunn (1981) reported this species as a common winter visitant to Santa Catalina Island and casual on the other Channel Islands.

Phasianidae

Chukar (*Alectoris chukar*).* Common introduced breeder and resident. Breeds on steep grassy and rocky slopes, particularly on the southern half of the island. In late spring and summer flocks of up to 50 individuals can be found along roadsides. The California Department of Fish and Game introduced 176 individuals on 22 Aug 1960 (Jorgensen and Ferguson 1984).

Odontophoridae

California Quail (*Callipepla californica*).† Extirpated; introduced but no longer present. No recent records. Grinnell (1897a) collected six specimens and recorded 20 individuals during his stay. He was told that 12 dozen were released 10 years prior to his visit (Jorgensen and Ferguson 1984).

Gambel's Quail (*Callipepla gambelii*).†* Common introduced breeder and resident. Ten dozen were introduced for hunting in 1912 (Huey 1932). This species is now a common resident found primarily on the southern half of SCI, typically not north of Stone Station. It prefers grassy terraces with widespread prickly pear cactus. It breeds throughout the spring, and broods (typically 8–15 birds) fledge from March through August.

Gaviidae

Red-throated Loon (*Gavia stellata*). Casual migrant and winter visitor. Four records:

one off Boulders South 5 Dec 2000 (JTB, RDMcM), one flying by West Cove Point 4 Mar 2002 (BLS, ELK), one off China Point 18 May 2002 (BLS et al.), and one off China Point 24 Apr 2004 (SWS et al.). This species is most likely to be found inshore, and it is the rarest of the three loons far offshore and around the Channel Islands (Garrett and Dunn 1981).

Pacific Loon (*Gavia pacifica*). Uncommon migrant; casual in winter and summer. Recorded in spring from 16 Mar to 21 May, exceptionally as late as 3 Jun (1972, 15 individuals, HLJ; 2003, two migrating off West Cove Point, BLS) and 7 Jun (2003, one migrating past China Point, BLS), and in fall from 6 Oct to 21 Dec. One winter record: three off China Point 8 Jan 2004 (HAC, JHP). One summer record: one on 25 Jul 1979 (PDJ). Fall migration peaks during November; spring migration peaks from late March through April. In fall the high count is of 63 migrating south past China Point 22 Nov 2003 (BLS); in spring it is of 358 migrating north past West Cove Point 30 Apr 2004 (SWS). The Pacific Loon is perhaps more likely to pass the island in numbers during fall, when the majority of migrants occur well offshore. In spring, migrants move north across a broad front ranging from well offshore to close to the mainland (Russell and Lehman 1994), and numbers are typically seen during light winds from the east. This species is most easily found flying by West Cove and China points, though large numbers sometimes congregate near feeding flocks of Brandt's Cormorants off the island's east side in winter and early spring. It was first recorded by Linton (1909) during the winter of 1908.

Common Loon (*Gavia immer*). Rare migrant and winter visitor. Recorded from 18 Oct to 7 Jun, exceptionally as late as 17 Jun (1995, one in breeding plumage in Northwest Harbor, RTP). In fall the high count is of three flying south past West Cove Point 4 Nov 2001 (BLS, AMC); in spring it is of seven moving north past West Cove Point 30 Apr 2004 (BLS). This species can be found in the calm waters of Pyramid, Horse Beach, and China Beach coves. Garrett and Dunn (1981) suggested the bulk of fall migrants move south well offshore, so the Common Loon's rarity around SCI is surprising. The species was first recorded 2 May 1974 (RS, WC).

Podicipedidae

Pied-billed Grebe (*Podilymbus podiceps*).† Very rare visitor; migratory pattern unclear. Eleven records spread nearly evenly throughout the year. This species seems as likely to occur during midsummer as during migration and winter. The Pied-billed Grebe is an uncommon winter visitor only to Santa Catalina Island and a stray elsewhere in the Channel Islands (Jones and Collins unpubl. data). SCI's first record was of a female shot by Howard W. Wright on 26 Aug 1908 (Howell 1917).

Horned Grebe (*Podiceps auritus*).* Casual migrant. One record: a single bird at West Cove Beach 18–20 Nov 2002 (RGD et al.). The Horned Grebe is a regular winter visitor to Santa Rosa Island and likely more frequent around the northern than around the southern Channel Islands (Jones and Collins unpubl. data). Small (1994) treated it as uncommon as far south as Santa Catalina Island, and it has now been recorded on all eight Channel Islands.

Eared Grebe (*Podiceps nigricollis*).† Uncommon migrant and winter visitor. Recorded primarily from 9 Oct to 13 May, exceptionally as early as 23 Aug (1996, one at West Cove, RTP) and 19 Sep (Jorgensen and Ferguson 1984). Most easily seen just off the surf at West Cove Beach, site of the high count of 20 on 16 Dec 1997 (JAM). Typical fall arrival dates are during the last half of October. This species appears to be most frequent during the winter months, especially December. It can also be seen rarely flying past West Cove Point during migration. It is regularly encountered in small flocks well out to sea (Garrett and Dunn 1981), perhaps explaining its regularity at SCI.

Western Grebe (*Aechmophorus occidentalis*)* Uncommon migrant; casual summer and winter visitor. Found most frequently near shore off the island's east side; rare at Lemon Tank. Recorded in spring from 25 Mar to 8 Jun, in fall from 18 Sep to 24 Nov. Seven winter records from 8 Dec to 24 Feb. Three summer records: one in West Cove 24–25 Aug 1996 (RTP), one in Wilson Cove 29 Jul 2001 (JTB, BLS), and two in Wilson Cove 20–28 Jul 2002 (JTB et al.). The Western Grebe has been recorded at SCI in every month, but summer records pertain primarily to immature birds in heavy molt. Most records are from fall migration, peaking in October and November. The high count is of 38 near West Cove 31 Mar 2004 (ELK). Jorgensen and Ferguson (1984) considered this species a rare winter visitor, although it seems unlikely that the status of this species has changed dramatically. More likely, increased observation near shore has contributed to the increase in records.

Clark's Grebe (*Aechmophorus clarkii*).* Casual migrant. Two fall records: one off Burns Canyon 12 Oct 2001 (BLS photo; Figure 15); one at Northwest Harbor 22 Oct 2002 (JTB). One spring record: one in West Cove 8 Jun 2003 (BLS, RSAK). This species seems to be a casual visitor offshore, unlike the commonly observed Western Grebe. Small (1994) stated that Clark's Grebe is less likely to occur on exposed coastal waters than the Western Grebe, and the data from SCI bear this out. Jones and Collins (unpubl. data) have only five other records for the Channel Islands.

Diomedeidae

Laysan Albatross (*Pheobastria immutabilis*).# Casual migrant. Two records: a single bird flying past China Point 3 Jul 2001 (BLS, CWB); a single bird off Boulders South 17 Mar 2004 (SWS, JHP). This species' colonization since 1986 of several islands off Mexico may result in increasing observations around the Channel Islands in future years.

Black-footed Albatross (*Pheobastria nigripes*).† Casual migrant. Two records: one off China Point 30 Jul 2001 (BLS et al.); one off West Cove Point 13 Aug 2001 (SL). Also, J. C. Couffer collected a female 17 Jul 1949 somewhere "offshore San Clemente Island." Miller (1936) reported seven in the general region of Tanner Bank, southwest of SCI, on 2 Aug 1935. Jones and Collins (unpubl. data) have only two other records within 1 km of the Channel Islands.

Procellariidae

Northern Fulmar (*Fulmarus glacialis*).* Irregularly uncommon (in typical years) to common (during invasion years) as a migrant and winter visitor; casual in summer. Recorded primarily from 18 Oct to 10 Apr, exceptionally as late as 24 Apr (2004, three off China Point, SWS et al.) and 5 May (1974, one found dead, WC, RS). The fall high count is of 27 passing south off West Cove Point 26 Nov 2003 (BLS et al.). During invasion years the Northern Fulmar is seen frequently just offshore and found dead regularly on island beaches. Of those recorded to morph, 89% are dark. Three summer records: one of the light morph off China Point 2 Jul 2001 (FB et al.), one off China Point 13 Jun 2004 (SWS et al.), and one off West Cove Point 23–27 Jul 2004 (JMMcM et al.); three of these were in summer 2004 after a large winter invasion of this species along the west coast (Sullivan 2004). Though first recorded by an ornithologist at SCI 2 Dec 1972 (HLJ), this species was heavily exploited for food by early maritime hunter–gatherers (Porcasi 1999a).

Murphy's Petrel (*Pterodroma ultima*).# Accidental. One record: a single bird flying past West Cove Point with Sooty Shearwaters 19 Apr 2002 (BLS). Murphy's Petrel has been seen at least twice in May from land at San Nicolas Island (W. Wejhte pers. comm., Jones and Collins unpubl. data). It occurs with some regularity in waters well off southern California (Small 1994) but remains very unlikely to be seen from shore.

Figure 4. View north from Horton Canyon along San Clemente Island's east side.

Photo by Jonathan J. Dunn

Figure 5. Horse Beach at San Clemente Island's southern tip, July 2001.

Photo by Brian L. Sullivan

Pink-footed Shearwater (*Puffinus creatopus*).* Fairly common migrant and summer visitor; casual in winter. Recorded primarily from 9 Apr to 25 Nov, exceptionally as early as 4 Mar (2002, two off West Cove Point, BLS, ELK) and 16 Mar (2003, one off West Cove Point, ELK). First recorded from shore 10 May 2001 (BLS et al.), but it has been recorded since during every month except February, likely because of an increase in observer effort rather than a true change in status. Large numbers occur during spring and fall migration, but this species becomes difficult to find in late winter and early spring when most return to the Southern Hemisphere. The spring high count is of 700 rafted with Sooty Shearwaters 3 km off Horton Canyon 9 Jun 2001 (BLS, CWB); the fall high count is of 1552 passing south off Eel Point 9 Sep 2001 (BLS, JTB). Numbers ranging from 10 to 50 are more frequently encountered during migration periods. Two winter records: five off Pyramid Point 17 Dec 2001 (BLS et al.); one off West Cove Point 16 Jan 2002 (BLS, ELK).

Flesh-footed Shearwater (*Puffinus carneipes*).# Casual fall migrant. Two records: a single bird moving south past West Cove Point 25 Oct 2002 (TRL, BLS); one just off China Point 18 Oct 2003 (BLS et al.). These are the only records of this species within 1 km of the Channel Islands. There are several reports farther offshore around the islands during fall (Jones and Collins unpubl. data).

Buller's Shearwater (*Puffinus bulleri*). Casual fall migrant. Three records: one at China Point 24 Aug 2001 (CWB); one or two off West Cove Point 6 Sep 2001 (BLS et al.); one with Sooty Shearwaters moving past China Point 28 Aug 2002 (BLS, AMC). Buller's is likely more frequent during fall than the records imply.

Sooty Shearwater (*Puffinus griseus*).†* Fairly common spring and uncommon fall migrant; fairly common summer visitor; casual in winter. Recorded primarily from 16 Mar to 30 Sep. There are no October records, but there are six records of Sooty/Short-tailed Shearwaters 4–24 Nov. Two winter records: one off Pyramid Point 17 Dec 2001 (BLS et al. photo); one off West Cove Point 7 Jan 2004 (BLS, JHP). As of 1983, there were only three records for SCI (Jorgensen and Ferguson 1984), not including the 200 reported by Miller (1936) rafted just west of SCI 31 Jul 1935. With increased observer effort this species is now recorded regularly. It is easily seen from shore during late spring, summer, and early fall when conditions are optimal for viewing: typically calm seas and low overnight fog. Possibly it occurs in small numbers year round, being confused with the Short-tailed Shearwater, which occurs during the late fall and winter. The Sooty is most common during spring migration; the high count is of 1500 rafted with Pink-footed Shearwaters 3 km off Horton Canyon 9 Jun 2001 (BLS, CWB). It is less common during fall, when the majority are gone by mid September; the fall peak is of 337 moving past China Point 28 Aug 2002 (BLS, AMC). The year 2004 was especially poor for viewing this species from SCI, with just ten records of 57 birds.

Short-tailed Shearwater (*Puffinus tenuirostris*).#* Casual late fall migrant and winter visitor. Six records from 22 Nov to 16 Mar. First recorded 22 Nov 2001 when two were off West Cove Point (BLS, CRK). Owing to the difficulty of distinguishing the Short-tailed from the Sooty Shearwater at any distance, most dark shearwaters seen from shore in winter are left as unidentified. Interestingly, prehistoric remains of this species have been identified from the middens of early hunter–gatherers, whereas those of the Sooty Shearwater have not (Porcasi 1999a).

Manx Shearwater (*Puffinus puffinus*).# Accidental. One record: two flying south past West Cove Point 4 Mar 2002 (BLS, ELK; Cole and McCaskie 2004).

Black-vented Shearwater (*Puffinus opisthomelas*).# Casual migrant and winter visitor. Four records: one off Eel Point 27 Mar 2001 (BLS), one off West Cove Point 29 Mar 2001 (BLS), one flying past China Point 1 Jul 2001 (BLS, AMC), and one flying south past West Cove Point 18 Dec 2002 (JHP et al.). Although this nearshore

species occurs only casually near SCI, it ranges more regularly to waters off Santa Catalina Island in late fall and winter (BLS pers. obs.). The difficulty of distinguishing this species from other small black-and-white shearwaters obliged us to leave two birds seen in March unidentified.

Hydrobatidae

Wilson's Storm-Petrel (*Oceanites oceanicus*).# Accidental. Two records: Miller (1936) collected a single individual rafted with Black Storm-Petrels east of SCI and 40 km off San Diego 31 Aug 1935 (UCLA 2222); one was "offshore" of SCI 5 Sep 1962 (Garrett and Dunn 1981). A bird showing features consistent with this species was seen moving north past China Point with Ashy Storm-Petrels 6 Sep 2001 (BLS et al.), but similar white-rumped species, such as Elliott's (*O. gracilis*) and Wedge-rumped Storm-Petrels (*Oceanodroma tethys*), could not be eliminated.

Leach's Storm-Petrel (*Oceanodroma leucorhoa*).†* Casual migrant and visitor. Five records: one was found below a wire crossing Ridge Road above Bryce Canyon 13 Jul 2001 (BLS; Figure 16), one was 5–8 km off Horton Canyon with a large northward movement of Black Storm-Petrels 17 Aug 2001(BLS et al.), one collided with a light fixture on the Wilson Cove pier 9 Jun 2002 and was subsequently released (AVB, DMC photo), one was found in a water tank at Wilson Cove 23 Jun 2003 (CLS), and one on the Wilson Cove pier 15 Jul 2003 recovered and was subsequently released (JMT). Of the five records for SCI, four are of injured (wrecked) birds, suggesting occurrence more frequent than is known. Although we categorize this species as casual on the basis of the number of records, away from shore it is seen regularly (Garrett and Dunn 1981). It breeds as close as San Miguel Island and Islas Los Coronados off Tijuana (Huntington et al. 1996). Three of five records are of light-rumped individuals, but those found in summer 2003 were mostly dark-rumped, resembling most of the Leach's Storm-Petrels nesting on Islas Los Coronados (Bourne and Jehl 1982).

Ashy Storm-Petrel (*Oceanodroma homochroa*).† Casual migrant and visitor. Three recent records of birds seen from China Point: one on 4 Jul 2001 (BLS), >300 in a flock 29 Jul 2001 (CWB et al.), and four on 6 Sep 2001 (BLS et al.). Like other storm-petrels, this species is difficult to see from shore, so it is likely more common near SCI than records indicate. Miller (1936) reported it attracted to his ship in Pyramid Cove 30 Aug 1935. He hypothesized that postbreeding dispersal, rather than a nearby breeding colony, was the likely explanation for this species' appearance around SCI in late summer. Ainley (1995) cited H. R. Carter as suspecting "hundreds" breeding on offshore rocks of SCI, but subsequent searches for this species have proven fruitless (BLS pers. obs.). This species' occurrence on SCI could be tested with some target mist-netting, but as of this writing this has not yet been attempted. The record of >300 suggests that concentrations of food may bring large numbers to waters off SCI.

Black Storm-Petrel (*Oceanodroma melania*).* Casual spring and fall migrant and summer visitor. We list the Black, like Leach's Storm-Petrel, as casual only in terms of the number of records. It likely occurs more frequently than is known. Five recent records: three or four offshore between SCI and Santa Catalina Island 17 May 2001 (SJK et al.), one off China Point 1 Jul 2001 (BLS, AMC), one photographed off Pyramid Point 31 Jul 2001 (BLS et al.), 72 moving north 4–8 km off Horton Canyon 17 Aug 2001 (BLS et al.), and one off China Point 18 May 2002 (BLS et al.). The nearest confirmed nesting locations are Santa Barbara Island and Islas Los Coronados (Ainley and Everett 2001). Black Storm-Petrels appear to be more easily seen off the east shore of SCI, particularly a few miles east of Pyramid Point. Breeding is possible in the past but unlikely currently because of terrestrial predators: Grinnell (1897a) reported hearing Black Storm-Petrels at night in Mosquito Cove 28 Mar–7 Jun 1897; Miller (1936) reported this species around his ship docked in Pyramid

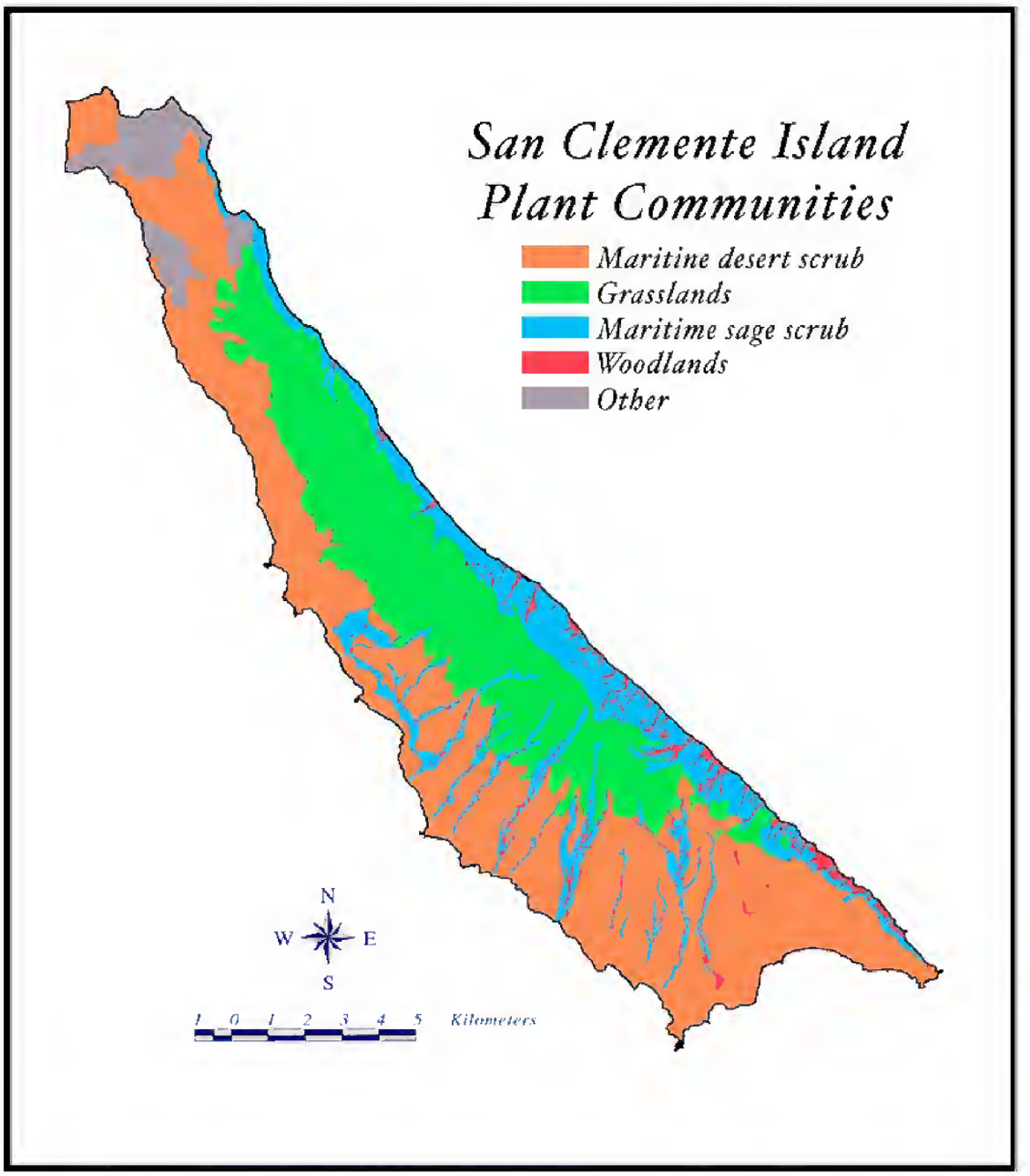

Figure 6. San Clemente Island plant communities (simplified from the U. S. Navy's integrated natural-resources-management plan).

Cove in July and August 1935. To the southeast of SCI, 45 were seen at Tanner Bank 10 Nov 1990 (JLD).

Least Storm-Petrel (*Oceanodroma microsoma*). Casual migrant. One record from shore: one flying north past China Point 1 Jul 2001 (BLS, AMC). Probably more common than records indicate during invasion years when postbreeding dispersal sends large numbers into southern California waters (G. McCaskie pers. comm.). Seen frequently on the ocean near SCI from mid-August through September (Small 1994); 41 were at Tanner Bank southeast of SCI 10 Nov 1990 (JLD). Miller (1936) reported a single individual rafted with Black Storm-Petrels east of SCI 31 Aug 1935.

Phaethontidae

Red-billed Tropicbird (*Phaethon aethereus*).†*# Rare summer and early fall visitor. Recorded from 2 Jul to 5 Oct, dispersing from Mexican waters. Miller (1936) reported

Figure 7. San Clemente Island circa 1970s, showing feral goats and lack of vegetation on canyon slopes.

Photo property U.S. Navy

Figure 8. Classic "root perching" caused by erosion on San Clemente Island.

Photo by Jonathan J. Dunn

Figure 9. Cholla at Lost Point on San Clemente Island's southwest side, April 2002.

Photo by Brian L. Sullivan

two near SCI during summer 1935. The species is seen regularly in some years from boats 1–9 km south of China Point, and occasionally from shore during good years (2001 and 2003). Late July and August are best; the high count of 15–20 was from a boat 1–3 km off China Point 29 Jul 2001 (BLS et al.; Figure 17). The mobility of the birds made an exact count difficult, but 12 individuals were in view at once several times during the afternoon (BLS, JHP). Although this is the high count for the United States, it likely under-represents the total number of Red-billed Tropicbirds encountered that day. Garrett and Dunn (1981) and Small (1994) described Pyramid Cove as a spot favored by Red-billed Tropicbirds, and this statement still holds true today. An unidentified tropicbird was seen 10 Nov 2001 (BLS, AMC). One male was collected 27 Jul 1968 approximately 8 km south of SCI (JRJ, SDNHM 36751).

Sulidae

Masked Booby (*Sula dactylatra*).†*# Casual visitor. Three records, probably of the same individual: a subadult roosting on Bird Rock 17 Jan–29 Mar 2003 (JTB et al.), an adult at China Point 10 Aug–31 Dec 2003 (BLS et al.; San Miguel and McGrath 2005), and an adult photographed at China Point 13 Jul–15 Aug 2004 (BLS et al.; Figure 18). A single adult was 56 km southwest of SCI 10 Jan 1977, the first record for California (Lewis and Tyler 1978, Luther et al. 1979). Jones and Collins (unpubl. data) have just three other records for the Channel Islands: two from San Miguel Island and one from San Nicolas Island, though only one of these has been accepted by the CBRC.

Blue-footed Booby (*Sula nebouxii*). Accidental. One record: one adult flying south past West Cove Point 17 Nov 2002 (BLS; San Miguel and McGrath 2005). Two other reports have been rejected by the CBRC. A high count of 37 on Islas Los Coronados 21 Nov 1971 (Garrett and Dunn 1981) suggests that this species has perhaps been overlooked on SCI during its sporadic irruptions—of which there have been none since 1972.

Brown Booby (*Sula leucogaster*).#* Accidental. One record: a juvenile roosting with a Masked Booby at China Point 1–3 Nov 2003 (BLS *et* al.; Figure 19; San Miguel and McGrath 2005). This species has been found with increased frequency in recent years on Islas Los Coronados and Todos Santos, Mexico (Hamilton *et* al. 2004). Jones and Collins (unpubl. data) have reports of this species from six of the Channel Islands.

Pelecanidae

Brown Pelican (*Pelecanus occidentalis*).†* Common migrant and visitor. This species is present year round in good numbers, although it does not breed on SCI. Northward dispersal from Mexican breeding grounds augments numbers in summer and fall, when Briggs *et* al. (1981) estimated the island high count of 1800. Our high count from land is of 350 flying north past Eel Point 9 Sep 2001 (BLS, JTB).

Phalacrocoracidae

Brandt's Cormorant (*Phalacrocorax penicillatus*).†* Fairly common breeder and resident. The most common cormorant on SCI, this species nests on sea cliffs and offshore rocks. The two largest colonies are currently at Bird Rock (approximately 100 pairs) and Seal Cove (approximately 30 pairs). Large feeding flocks of this species form around the island during late winter and spring, when up to 4500 have been estimated (Jorgensen and Ferguson 1984). Linton (1908) first recorded nesting in 1907.

Double-crested Cormorant (*Phalacrocorax auritus*).† Uncommon breeder and resident. Breeds on SCI in numbers much smaller than those of Brandt's Cormorant, with approximately 12 pairs known from Seal Cove (2001–2003, BLS *et* al.). Eleven nests were active at Seal Cove 7 Jul 2003 (BLS, RSAK). During a search of Bird Rock in July 2002, none were found breeding among the Brandt's Cormorants nesting there (BLS, JTB). This species was not recorded breeding on SCI as of 1984, and its recent colonization is worthy of note.

Pelagic Cormorant (*Phalacrocorax pelagicus*). Uncommon winter visitor and migrant. Recorded 3 Nov–6 Apr, exceptionally as late as 30 Apr (2004, one off West Cove Point, SWS). No more than two recorded at any one time. Most often seen near rocky coasts or flying past with large flocks of Brandt's and Double-crested Cormorants. Breninger (1904) reported nesting, but subsequent searches of SCI's cormorant colonies have not corroborated this.

Ardeidae

Great Blue Heron (*Ardea herodias*).† Uncommon nonbreeding visitor year round. Most records are from September through January, when fall migrants arrive and overwinter. Summer records are predominately of immature birds. Great Blue Herons are often seen fishing from atop kelp patties offshore.

Great Egret (*Ardea alba*).* Rare migrant; casual summer visitor. Recorded in spring from 11 Mar to 12 Jun, in fall from 19 Aug to 27 Dec. One winter record: 14 Jan 1997 (FAJ). The high count is of six standing on a kelp patty off Bryce Canyon 7 Oct 2001 (JHP). The Great Egret was first recorded at SCI 27 Dec 1972 (JLa), and Garrett and Dunn (1981) cited only three records for the Channel Islands.

Snowy Egret (*Egretta thula*). Casual spring and very rare fall migrant. Recorded six times in fall from 4 Sep to 26 Oct. Two spring records: one at the airfield 28 Apr 2001 (FB, NMM); one on Bird Rock 28 May 2002 (FB, NMM). The high count is of five at Boulders South 15 Sep 2004 (HAC *et* al.). This egret is a casual transient throughout the Channel Islands (Garrett and Dunn 1981).

Cattle Egret (*Bubulcus ibis*).* Rare visitor. Recorded from 2 Jul to 26 May. Since

Figure 10. San Clemente Island wildflowers, from top right *Eschscholzia ramosa* (island poppy), *Lupinus guadalupensis* (lupine) and *Amsinckia menziesii* (fiddleneck), *Lasthenia californica* (goldfields) and *Trifolium* sp. (clover), *Gilia nevinii* (Nevin's gilia), *Stylomecon heterophylla* (wind poppy), *Trifolium willdenovii* (clover), *Dodecatheon clevelandii insulare* (shooting star), *Phacelia floribunda* (San Clemente Island phacelia).

Photos by Jonathan J. Dunn

the 1960s the Cattle Egret has been the most common white ardeid encountered off southern California, though its frequency has decreased over the past 10 years. Since the first record for SCI 2 Nov 1973 (PDJ) it has been found essentially year round, but there are no June records. High counts are of 65 at Wilson Cove 26 Mar 1993 (WTE) and 21 on 13 Oct 1976 (HLJ). Jorgensen and Ferguson (1984) described this species as a regular fall and winter visitor, so its frequency has decreased over the past 20 years.

Green Heron (*Butorides virescens*).* Casual fall migrant. Five records: one 12 Sep 1974 (HLJ), one at Horse Beach 3 Oct 2001 (JTB photo), two at Boulders South 15 Sep 2004 (HAC et al.), one juvenile at Lemon Tank 16 Sep 2004 (JMMcM et

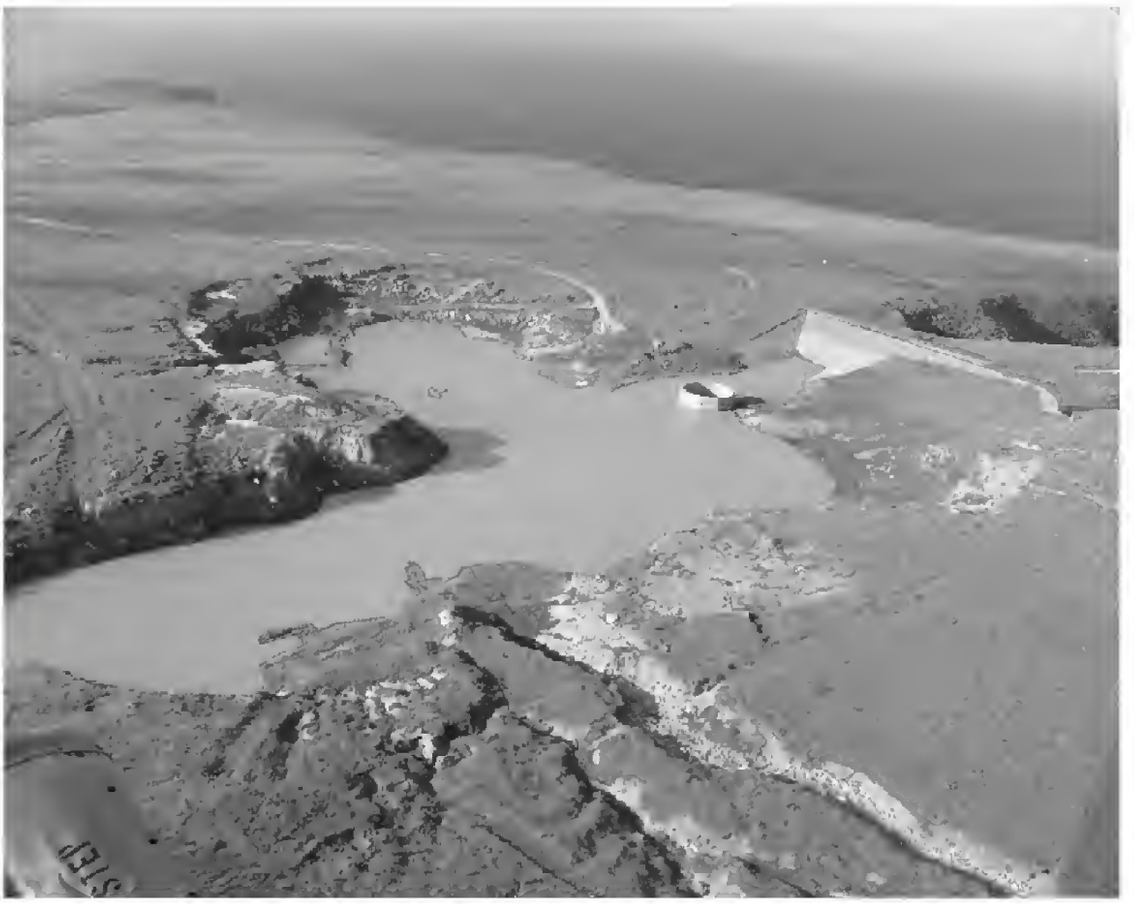

Figure 11. Lemon Tank, March 2003.

Photo by Ashleigh V. Blackford

al.), and one juvenile at Lemon Tank 7 Oct 2004 (BLS photo, JMMcM). Garrett and Dunn (1981) cited only two records for the Channel Islands, presumably including the one on 12 Sep 1974 listed above. Jones and Collins (unpubl. data) have records for all the Channel Islands except San Miguel.

Black-crowned Night-Heron (*Nycticorax nycticorax*). Casual migrant. Four records: 11 on 24 Aug 1894 (EAM unpubl. notes), one adult at the Wilson Cove pier 17 Jul 1972 (PDJ), one subadult 16 Sep 1981 (KMH), and one adult and one immature at Whale Point 26–27 May 2001 (FB et al.). Jones and Collins (unpubl. data) consider this species an occasional visitor to all the Channel Islands except Santa Catalina, where it is an uncommon winter visitor.

Threskiornithidae

White-faced Ibis (*Plegadis chihi*).* Accidental. One record: a flock of 10 at the Chad's Bluff ponds 19 May 2001 (JTB, BLS; Figure 20) stayed in the area and were last recorded at Whale Point 1 Jun 2001 (FB). A flock of four *Plegadis* ibises, likely this species, were seen flying north past Lost Point 4 Apr 2004 (JMMcM). A *Plegadis* ibis at Lemon Tank 6–9 Jul 2004 (CLD et al.) was well studied and photographed, but its identity is still unresolved. The bird showed several characters of the White-faced Ibis, but a hybrid with the Glossy Ibis (*P. falcinellus*) could not be ruled out. The Glossy Ibis began reaching California as a vagrant in 2000 (McKee and Erickson 2002), and hybrid ibises have been discovered in California recently (M. Iliff pers. comm.). Jones and Collins (unpubl. data) have five other Channel Islands records of the White-faced, four from fall and one from spring.

Figure 12. Greater White-fronted Goose at Lemon Tank, October 2002.

Photo by Brian L. Sullivan

Figure 13. Cackling Geese, one *B. h. leucopareia*, one possibly *B. h. minima*, at Chad's Bluff 14 October 2001.

Photo by Brian L. Sullivan

Figure 14. Male Ring-necked Duck at Lemon Tank 14 November 2003

Photo by Brian L. Sullivan

Cathartidae

Turkey Vulture (*Cathartes aura*). Accidental. One record. First recorded 25 May 1968 (MLC, JMD), then noted apparently regularly until 28 Apr 1981 (PDJ, HLF). Jorgensen and Ferguson (1984) described the Turkey Vulture as an uncommon visitor from 27 Feb to 3 Nov, with no more than one individual seen at any given time, but there are no recent reports. Thus a single long-staying individual may have arrived and remained on the island year round for at least 13 years (for a parallel, see also the account of the Broad-winged Hawk). Jones and Collins (unpubl. data) have sightings on Santa Rosa, Santa Cruz, San Nicolas, and Santa Catalina islands. The vulture's occurrence on SCI may have been linked to the effort to remove feral animals resulting in large amounts of carrion.

Accipitridae

Osprey (*Pandion haliaetus*).†* Rare, occurring year round as a nonbreeding visitor; extirpated as a breeder. Recorded primarily as a migrant in spring and early summer from 6 Mar to 12 Jul, in fall from 4 Sep to 16 Dec. At least six records later in the summer and nine in winter, most of long-staying individuals. The high counts are of two at China Beach 13 Oct 2002 (AMC et al.) and two at West Cove Point 16 Nov 2002 (BLS). SCI formerly held the largest breeding population in the California Channel Islands with an estimated 20 active pairs in 1907 (Linton 1908). Grinnell (1897a) found the Osprey to be "quite abundant" at the south end of SCI during the spring of 1897 and stated that there was "hardly a rocky promontory or pinnacle which was not used as a nesting site." Population declines in the early 1900s led to its extirpation as a breeder, with the last nest recorded 26 Mar 1927. Shooting by fishermen likely contributed to its decline and subsequent extirpation from the Channel Islands (Kiff 1980). Kiff (1980) also suggested that some deleterious change in the Osprey's food supply may have occurred in the 1920s and 1930s, possibly contributing to the decline. By the 1970s this species was only an occasional transient on the Channel Islands (Garrett and Dunn 1981), but from 2000 through 2004 it was of

Figure 15. Clark's Grebe off Burns Canyon 12 October 2002.

Photo by Brian L. Sullivan

rare but regular occurrence on SCI. It is found along both shorelines with numerous records from the north end (West Cove/Whale Point area) and from Horse Beach and Chenetti Cove in the south, a few at Lemon Tank. An increase in records over the past several years is perhaps promising for future breeding.

White-tailed Kite (*Elanus leucurus*).* Casual breeder; rare migrant and winter visitor. Recorded year round, but most records are from October to January; migra-

Figure 16. Leach's Storm-Petrel found above Bryce Canyon 13 July 2001.

Photo by Brian L. Sullivan

Figure 17. Adult Red-billed Tropicbird off China Point 29 July 2001.

Photo by Brian L. Sullivan

tory interval clouded by breeders and dispersing juveniles. The White-tailed Kite has nested three times on SCI, its only known breeding on the California Channel Islands (Garrett and Dunn 1981, Small 1994; Figure 21). A nest in the single eucalyptus tree contained three nestlings in May 2000 (DMC). Three young fledged and were seen with the adults 11 Jun (RTP). In 2003, in the same eucalyptus tree, the pair was incubating by February and had nestlings on 26 Mar. The nest was found empty in early April after strong west winds and possible predation by Common Ravens (BLS pers. obs.). The pair subsequently left the area, and perhaps the island, only to return and begin courting again by Nov 2003. They fledged four young on 9 Feb 2004 (BLS et al.). These birds were then seen at various locations around SCI as far south as Eagle Canyon near the south end, last seen 1 Apr 2004. Perhaps they dispersed back to the mainland after that time.

This species is also an uncommon visitor during late summer, fall, and winter to grasslands from VC3 south, particularly around Bluff and the terrace above Tota Canyon. Dispersal of this species to SCI from the mainland varies from year to year (Scott 1994). The kite's occurrence on SCI is relatively new, as this species was first recorded 9 Sep 1981 (JL). By 1983 there were only two records (Jorgensen and Ferguson 1984). The kite was observed during 4 of the 12 years from 1981 to 1992 (Scott 1994) but during 8 of the subsequent 11 years. Because this species is so conspicuous, this increase is unlikely to be a result of increased observer effort. Numbers comparable to those reported by Scott (1994) during the invasion of 1984 were seen again during 1997–98 and 1999–2000 when up to 50 roosted on the terrace above Tota Canyon (SL et al.). Other high counts, both from the terrace above Tota Canyon: 26 roosting 23 Oct–27 Nov 1984 (TAS) and 23 roosting 4 Nov 1997 (JAM et al.). Standardized raptor surveys by the Institute for Wildlife Studies yielded a daily high count of six on 8 Oct 2002 (Cooper et al. 2003).

Figure 18. Adult Masked Booby on China Point 23 July 2004.

Photo by Brian L. Sullivan

Bald Eagle (*Haliaeetus leucocephalus*).†* Extirpated breeder; casual year-round visitor. The Bald Eagle was last recorded nesting on SCI 26 Mar 1927, when one pair was active (Kiff 1980). The maximum number of pairs known from SCI was three in Feb 1923, though additional pairs may have been nesting in the more remote locations of the island at this time (Kiff 1980). Fifteen sets of Bald Eagle eggs were collected from SCI (Kiff 1980). Breninger (1904) rather colorfully described the taking of a Bald Eagle specimen at SCI in 1903: "My man had gone down after the eggs, and while I was giving some minor directions, in an unguarded moment, a little dog that had followed from the house ran with a pitiful whine under my legs and curled up there in mortal terror. I had sat down on the ground, perhaps on account of proximity to the edge of the abyss and at the same time to have 'full swing' at rapid shooting. A moment after the dog had taken refuge an eagle came within a foot of striking me in the face with its wing. My gun came to my shoulder instantly. Bang! And a fine white-headed bird lay dying at the bottom of the barranca. The female too, was secured."

The Bald Eagle was extirpated as a breeder throughout the Channel Islands by the 1950s (Jorgensen and Ferguson 1984). The Institute for Wildlife Studies released four Bald Eagles on SCI from 1976 to 1978. Two of the four had to be recaptured and returned to captivity because of their inability to forage effectively, whereas the other two left the island soon after release (D. Garcelon pers. comm.). Most recent records are of immature birds from the Institute for Wildlife Studies' successful reintroduction program on Santa Catalina Island. A two- or three-year-old bird lacking patagial tags (with which the Santa Catalina birds are marked) was seen at Matriarch Canyon on 30 Mar 2002 (JJD). The Bald Eagle is found primarily along SCI's rocky

Figure 19. Juvenile Brown Booby at China Point 1 November 2003.

Photo by Brian L. Sullivan

shoreline, particularly along the east side of the island, but it can also be seen soaring high overhead.

Northern Harrier (*Circus cyaneus*).* Uncommon fall migrant and winter visitor; rare in spring; casual in summer. Recorded in spring from 20 Feb to 25 Apr, in fall from 14 Aug to 30 Nov, and throughout the winter. Fall migrants typically show up in mid- to late Aug and continue through Nov, when it becomes difficult to separate

Figure 20. White-faced Ibises at Chad's Bluff 19 May 2001.

Photo by John T. Brollini

Figure 21. White-tailed Kite near San Clemente Island's single eucalyptus tree 26 November 2003.

Photo by Brian L. Sullivan

migrants from wintering individuals (Figure 22). High counts of seven on 19 Nov 2002 and five on 13 Nov 2001, recorded on standardized raptor surveys (Cooper et al. 2003), substantiate this fall movement.

Breeding was suspected in 1997 but not confirmed (S. Lynn pers. comm.). That year, this species was seen until 14 Aug in the grasslands around VC3. Garrett and Dunn (1981) treated the harrier as a rare transient and winter visitor on the Channel Islands, citing just 15 records. Since being first recorded 3 Nov 1973 (HLJ), it has proven to be of regular occurrence on SCI.

Sharp-shinned Hawk (*Accipiter striatus*).†* Rare migrant and winter visitor. Recorded from 23 Sep to 9 May. This species is typically found in wooded canyons but can also be seen soaring almost anywhere over the island during migration. Most records are of juveniles, but adults have also occurred. Of the North American accipiters, this species is the most likely to cross water (Kerlinger 1989), so its more regular occurrence on the Channel Islands is no surprise. The appearance of this species in small numbers on SCI seems to be correlated with calm or light northeasterly winds and clear skies (BLS pers. obs.). High counts during standardized raptor surveys (Cooper et al. 2003) are of three on 7 and 8 Oct 2002 and two on two dates. This species was formerly considered a vagrant, with only four records as of 1983 (Jorgensen and Ferguson 1984).

Broad-winged Hawk (*Buteo platypterus*).* Accidental. One record: a juvenile of the light morph found at Lemon Tank 31 Oct 2001 (BLS; Figure 23) remained on SCI for almost one year, being last reported on 10 Oct 2002. Though the Broad-winged Hawk is regular during fall migration along California's mainland coast, this record is the first of this species on the Channel Islands.

Figure 22. Immature female Northern Harrier at Lemon Tank 27 November 2003.

Photo by Brian L. Sullivan

Figure 23. Immature Broad-winged Hawk at Lemon Tank 31 October 2001.

Photo by Brian L. Sullivan

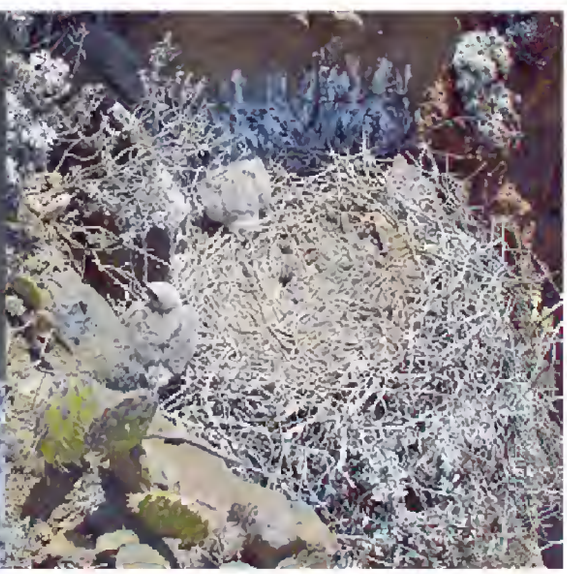

Figure 24. Red-tailed Hawk nest on a cliff ledge with two 20-day-old chicks in Box Canyon 20 April 2002.

Photo by Nicole M. Munkwitz

Red-tailed Hawk (*Buteo jamaicensis*).†* Fairly common breeder and resident. Red-tailed Hawks have been on SCI for at least 3500 years, as evidenced by remains found in ceremonial burials of the island's early human inhabitants (Hale 1995). Early ornithologists also recorded this species (Breninger 1904, Linton 1908, Howell 1917). This species' recent status on SCI is of great interest. Jones and Diamond (1976) categorized the Red-tailed Hawk as an "in and out" species on SCI, suggesting that it was not present in the late 1800s, colonized briefly in the early 1900s, and vanished again by 1968. It was not recorded between 1973 and 1976 (Jones and Diamond 1976), although a breeding pair had young in Cave Canyon 28 Jun 1980 (HLF). It seems unlikely that this species could have been missed through four years of visits to SCI in the mid-1970s, but the reason for its disappearance and subsequent successful recolonization remains a mystery. Jones and Diamond (1976) suggested this species' need for a large breeding territory as a possible reason for its fluctuating status. It is possible that the species underwent serious population fluctuations due to extensive drought, or it may have persisted throughout these times in very small numbers in less accessible areas. Red-tailed Hawk nests are often inconspicuous and located in difficult areas, so failure to detect this species does not necessarily indicate its absence from an island as large as SCI. This species is long-lived, and a few adults persisting through lean times may have been enough to allow the population to recover when conditions improved.

Like the other large raptors on SCI, the Red-tailed Hawk likely suffered from man-made mortality in the form of shooting, poisoning, egg-collecting, and electrocution on utility lines.

Currently, there are approximately 25 breeding pairs of Red-tailed Hawks on SCI (Cooper et al. 2003), a number similar to that on Socorro Island, Mexico (Walter 1990). In 2001, Cooper et al. (2002) identified 21 Red-tailed Hawk territories, in 14 of which they confirmed nests. In 2002, Cooper et al. (2003) identified 24 Red-tailed Hawk territories, in 22 of which they confirmed nests. It is likely that some nests were missed because of restricted access to parts of the island and inaccessibility of some cliffs. Jorgensen and Ferguson (1984) considered this species rare throughout the year, though they did not estimate a number of breeding pairs. Jorgensen (pers. comm.) suggests that this species' numbers on SCI have increased substantially since the early 1970s.

Perhaps a proliferation of introduced prey contributed to the increase. Cooper et al. (2003) monitored raptors on SCI during 2001 and 2002. They reported 0.46 (2001) and 0.44 (2002) Red-tailed Hawks per kilometer of road transects and 0.94 (2001) and 1.15 (2002) Red-tailed Hawks per kilometer of hiked transect. From these results they estimated a population ranging from 48 to 79 individuals. These surveys yielded high counts of 50 on 11 Aug 2001, 58 on 20 July, and 47 on 20 Sept 2001 (BLS, AMC).

Pairs remain on territory year round, with courtship beginning as early as late December, more typically in January. Incubation begins sometimes as early as mid-February, typically in early to mid-March. The average clutch size is 2 (range 1–4). Mean productivity in 2001 and 2002 was 1.8 and 1.2 fledglings per nest, respectively (Cooper et al. 2002, 2003). Both sexes build the nest, but primarily the female incubates. This species nests on the upper third of cliffs, typically with little cover above the nest (Figure 24). It uses canyon cliffs more commonly than sea cliffs, though several pairs do nest on sea cliffs, as at Seal Cove and West Cove (Cooper et al. 2002, 2003, Sullivan et al. unpubl. data). Red-tailed Hawks have not yet been found nesting in trees on SCI despite the availability of large Catalina cherry trees in canyon bottoms, so their cliff-nesting habits may be a form of specialization on SCI (Sullivan et al. unpubl. data).

Studies of prey composition at nest sites revealed high proportions of mammalian prey, typically Black Rats and Deer Mice (*Peromyscus maniculatus*). Red-tailed

Hawks also consumed two species of lizard (*Uta* and *Xantusia*) as well as a small proportion of avian prey (e.g., Western Meadowlarks and European Starlings) (Institute for Wildlife Studies unpubl. data). Studies with marked individuals showed no emigration from SCI, and standardized raptor surveys have revealed no evidence for migration of this species from the mainland to the island (Cooper et al. 2002, 2003).

There are no records of rufous or dark-morph Red-tailed Hawks on SCI, also suggesting little or no migration to the island in fall and winter, contra Jones and Diamond (1976). Juvenile Red-tailed Hawks typically disperse away from their natal areas and congregate in parts of the island unoccupied by adults, particularly at the north end of the island (e.g., the airfield terraces and VC3 plateau). Concentrations of juveniles can also be found at the south of the island around Pyramid Point, where small groups or kettles form in late summer (BLS).

Falconidae

American Kestrel (*Falco sparverius*).†* Fairly common breeder and resident; migratory status uncertain. This species has colonized SCI only recently, as ornithologists visiting during the breeding season in the late 1800s did not detect it (Mearns unpubl. notes, Grinnell 1897a). Santa Cruz was the only Channel Island occupied by breeding American Kestrels in the early 1900s (Jones and Diamond 1976). By 1907 kestrels were reported as occasional on SCI by Linton (1908), who collected one on 27 Nov 1908 (Linton 1909), but they were not recorded by other ornithologists during 15 other years between 1863 and 1920 (Jones and Diamond 1976). Jones and Diamond (1976) categorized this species as a "terminal immigrant," meaning that a population became established and has continued to breed without interruption since colonizing, which must have occurred after 1920. The American Kestrel is now the most abundant breeding raptor on SCI with 62 territories identified in 2001, 69 territories identified in 2002 (Cooper et al. 2002, 2003, Sullivan et al. 2003). Jorgensen and Ferguson (1984) counted 70 between Wilson Cove and Thirst on 2 Jan 1980. Cooper et al. (2003) reported 0.87 (2001) and 1.02 (2002) American Kestrels per kilometer of road transect, and 2.2 (2001) and 2.1 (2002) American Kestrels per kilometer of hiking transect. Resulting population estimates for this species on SCI ranged from 141 to 471 individuals (Cooper et al. 2003). Island-wide raptor surveys yielded high counts of 91 on 20 Jul 2002, 81 on 16 Jun 2001, and 66 on 9 Nov 2001 (BLS, AMC).

Numbers appear to fluctuate annually with rainfall and prey availability, with good productivity and survivorship during wet years (BLS pers. obs.). Courtship begins in late February and early March, with most birds incubating by the end of March. Clutch size is unknown, but productivity estimates range from two to six young per nest (Cooper et al. 2002, 2003). Nestlings typically fledge from late April through early June, when large numbers start to arrive at dispersal locations along Ridge Road, particularly at the island's north end and across its spine, where large flat terraces are bisected by continuous power lines, creating miles of suitable hunting perches. Kestrels nest predominately in natural cavities in cliffs in canyons; also, several have nested in buildings and other artificial structures on SCI (Sullivan et al. 2003). On SCI, kestrels nest in cavities oriented to the southeast, away from the predominant northwest wind (Sullivan et al. 2003). Observations of foraging adults revealed a high proportion of lizards in their diet, particularly *Uta*; the birds also take aerial insects, small mammals, and arthropods (BLS pers. obs.).

The American Kestrel colonization of SCI may have been induced by the introduction of feral grazers, which opened up previously covered ground (Sullivan et al. 2003). The elimination of ground cover and shrubs may have allowed the kestrel to proliferate in an environment with little competition, perhaps only from the San Clemente Loggerhead Shrike. With the current regeneration of the island's native vegetation, it will be interesting to see how numbers of this species change.

Figure 25. Snowy Plover at West Cove Beach, October 2003.

Photo by Brian L. Sullivan

Merlin (*Falco columbarius*).* Rare migrant and winter visitor. Recorded from 21 Sep to 16 Apr. First recorded 30 Mar 1915 (Howell 1917) and recorded only three times as of 1983 (Jorgensen and Ferguson 1984), the Merlin is now seen regularly during migration. Most records come from fall migration, peaking from mid October through November. There is a less noticeable peak during spring migration in March. All three North American subspecies have been recorded on SCI. The most common is nominate *F. c. columbarius* (75%), whereas *F. c. suckleyi* (25%) occurs

Figure 26. Juvenile Buff-breasted Sandpiper at Lemon Tank 19 September 2002.

Photo by Brian L. Sullivan

Figure 27. Wilson's Phalarope at a pond along REWS Road 1 April 2004.

Photo by Brian L. Sullivan

Figure 28. First-winter Ring-billed Gull at China Point 4 October 2003.

Photo by Brian L. Sullivan

Figure 29. Black Skimmers (one banded) at Northwest Harbor 20 September 2002.

Photo by John T. Brollini

less frequently (BLS pers obs). There is a single record of the Prairie Merlin (*F. c. richardsoni*): a female or immature male at Wilson Cove 16 Mar 2002 (BLS, AMC). Merlins are typically seen flying low and fast over open areas across the island, occasionally along the canyon rims.

Peregrine Falcon (*Falco peregrinus*).†* Extripated breeder; rare migrant and winter visitor. Recorded primarily from 20 Sep to 19 Apr, exceptionally as early as 7 Sep (2001, one juvenile at Lemon Tank, BLS, AMC) and as late as 7 May (2002, one at West Cove Beach, ELK) and 10 May (2003, one at Box Canyon, RSAK). Formerly a rare resident (Breninger 1904, Mearns 1907, Linton 1908, Howell 1917). This

Figure 30. Xantus's Murrelet with downy chick off China Point 4 July 2001.

Photo by Brian L. Sullivan

Figure 31. Dusky Flycatcher at Spanish Curve 23 April 2004.

Photo by Brian L. Sullivan

species is reported most frequently during November and December and then again in March. The high count is of three on 7 Mar 2002 (BLS, AMC).

Although a nest site of this species has never been located on SCI, Linton (1908) reported two pairs in 1907 and stated that a pair bred that year, although he provided no details. Howell (1917) reported Peregrine Falcons during Mar and Apr 1915 but was unable to locate a nest. Kiff (1980) suggested that this species may have been overlooked and that numbers may have been higher historically than Linton's two pairs. On the Channel Islands, this species was most common near seabird colonies (Howell 1917). The introduction of nonnative mammalian predators may have depressed the abundance of prey available to this falcon. Peregrine Falcons were also shot, subjected to egg-collecting, and suffered the effects of DDE-induced eggshell thinning (Kiff 1980). Most Peregrine Falcons observed on SCI appear to be nominate *F. p. anatum*, but dark birds showing the characters of *F. p. pealei* were seen three times: one juvenile at Lemon Tank 7 Sep 2001 (BLS, AMC), one adult at West Cove Point 10 Feb 2004 (BLS, ELK), and one at Horse Canyon 6 Apr 2004 (BLS, CML). The only reported specimen is of *F. p. anatum*, taken 18 Feb 1903 (Breninger 1904).

Prairie Falcon (*Falco mexicanus*). Accidental. One record supported by multiple observers and details: one being harassed by American Kestrels in upper Horse Beach Canyon 5 May 2001 (BLS et al.). Small (1994) called this species "exceedingly rare" on the offshore islands but provided no further details. The dearth of records from SCI supports this statement.

Figure 32. Female Vermilion Flycatcher at Horse Beach 29 September 2003.

Photo by Brian L. Sullivan

Rallidae

Virginia Rail (*Rallus limicola*). Casual fall migrant. Two records: one in Wilson Cove Canyon 19 Sep 1975 (HLJ); one in Chenetti Canyon 7 Oct 2001 (BLS). Garrett and Dunn (1981) cited five records for the Channel Islands, presumably including the one for 19 Sep 1975. Subsequently, the Virginia Rail has been found breeding once at Prisoner's Harbor, Santa Cruz Island, and become known as a rare

Figure 33. Adult Loggerhead Shrike at Lemon Tank, fall 2002.

Photo by Brian L. Sullivan

fall transient on San Nicolas, Santa Barbara and Santa Catalina islands (Jones and Collins unpubl. data).

Sora (*Porzana carolina*).†* Casual fall migrant; accidental in spring. Seven records from 13 Sep to 28 Mar, four of these 13–22 Sep. First recorded when Linton (1909) found one partially eaten, deep in a canyon near Mosquito Cove. The Sora is an occasional transient and winter visitor on the other Channel Islands (Garrett and Dunn 1981).

American Coot (*Fulica americana*). Very rare fall and spring migrant. Ten fall records from 19 Sep to 16 Nov; three spring records from 20 Mar to 8 May. First recorded 20 Sep 1975 (HLJ). While this species has been called a regular transient on the Channel Islands (Garrett and Dunn 1981), our data suggest it might be rarer than previously thought on SCI. It has bred intermittently on Santa Catalina and Santa Cruz islands (Garrett and Dunn 1981).

Charadriidae

Black-bellied Plover (*Pluvialis squatarola*).†* Uncommon migrant and winter resident; casual in summer. Recorded primarily from 18 Jul to 27 Apr, also twice in summer: one at West Cove Beach 27 May 2004 (SWS); one at Northwest Harbor 27 June 2004 (IR). This species is generally found along beaches or in the short vegetation around the airfield. The high count is of 32 at West Cove Beach on 17 Nov 2002 (BLS).

Pacific Golden-Plover (*Pluvialis fulva*).* Rare fall migrant and winter resident. Recorded primarily from 10 Oct to 4 Mar, exceptionally as early as 3 Aug (2001, one at West Cove Point, BLS, AMC) and 11 Sep (2004, five at Horse Beach, HAC) and as late as 4 Apr (2003, two at Whale Point, NMM). A flock of 16 golden-plovers was tentatively identified as this species as it flew past West Cove 23 Apr 2003 (CWB). Typically, winter visitors show up in early November. The high count is of 25 on the airfield 5 Nov 1998 (JAM, TRM). Late-fall and winter birds are typically found on and around the airfield. It seems likely that most, if not all, of SCI's golden-plovers have been the Pacific and not the American (*P. dominica*). Like the Black-bellied Plover, this species favors the short vegetation around West Cove Point, the airstrip, and the north end of SCI, and it often associates with flocks of the Black-bellied during winter. This species was first recorded 21 Sep 1975 (HLJ).

Snowy Plover (*Charadrius alexandrinus*).†* Casual breeder; fairly common migrant and winter visitor (Figure 25). The Western Snowy Plover (*C. a. nivosus*) was listed as threatened along the Pacific coast by the USFWS in 1993 (Page et al. 1995). Snowy Plovers have nested three times on SCI: 22 Apr 1989 at West Cove, one chick, outcome unknown (Winchell 1990), 29 Mar 1996 at Horse Beach, three eggs depredated (Foster 1998, USDoN 2001), and 9 Mar 1997 at Horse Beach, three eggs, followed by three fledglings there 21 Apr 1997 (JHG) and two fledglings at nearby Pyramid Cove 31 May 1997 (Foster and Copper 2001, USDoN 2001). More commonly, this species is found as a migrant and winter resident on sandy beaches (5 Jul–8 Apr). The high count of 51 resulted from an islandwide survey on 23 Oct 2004 (PRBO unpubl. data). Snowy Plovers have also bred on San Miguel, Santa Rosa, and San Nicolas islands (Garrett and Dunn 1981) and are recorded commonly on sandy beaches during winter throughout the Channel Islands (Jones and Collins unpubl. data).

Semipalmated Plover (*Charadrius semipalmatus*).†* Rare spring and uncommon fall migrant. Recorded in fall from from 12 Jul to 22 Nov and 10 times in spring from 28 Mar to 4 May. There is one questionable winter record for 18 Jan 1994. The Semipalmated Plover has been recorded five times in winter elsewhere on the

Channel Islands (Jones and Collins unpubl. data, Garrett and Dunn 1981), so the winter record for SCI record has some precedent.

Killdeer (*Charadrius vociferus*).†* Casual spring and rare fall migrant; casual winter visitor. Recorded primarily in fall from 27 Aug to 29 Oct, exceptionally as late as 17 Nov (2002, two on West Cove Beach, AMC) and 23 Nov (1995, one at Northwest Harbor, BJR). Three spring records: one at Pyramid Point 12 June 1994 (WTE), one at Lemon Tank 5 June 2003 (RSAK), and one at VC3 8 June 2004 (SWS). Six winter records from 1 Dec to 20 Feb, exceptionally as late as 25 Mar (Jorgensen and Ferguson 1984). The high count of eight was recorded on 5 Dec 1978 (PDJ). This species breeds locally on the Channel Islands (Garrett and Dunn 1981), although there are no breeding records for SCI.

Mountain Plover (*Charadrius montanus*).† Formerly a fairly common winter visitor; no recent records. Apparently occurred regularly during the ranching years, when Breninger (1904) collected a specimen 16 Feb 1903. An employee of the SCI Wool Company told Breninger that this species wintered "in incredible numbers," and this report seems plausible given the Mountain Plover's historic status as a common winter visitor on the coastal plain of southern California (Willett 1912) and on San Miguel Island (Jones and Collins unpubl. data). It is now seen rarely on San Nicolas and Santa Rosa islands (Jones and Collins unpubl. data). Historic grazing undoubtedly enhanced the habitat from the Mountain Plover's point of view.

Haematopodidae

Black Oystercatcher (*Haematopus bachmani*).* Rare breeder and resident. Breeds at least at two locations on SCI, Seal Cove and Bird Rock, though to date no more than three pairs (one pair including a hybrid American × Black) have bred in any one season. First suspected breeding 27 Apr 1975 (RC, JLa); first nestlings observed at Seal Cove 30 May 2001 (BLS, AMC) and spring 2002 (NMM, BLS), at Bird Rock 28 May 2002 (JTB et al.). Present year round on rocky coastlines, mainly on the west shore. At least two hybrid oystercatchers have been found year round as well, including the one that bred (apparently unsuccessfully) in 2002 (see below under Hypothetical Species for further discussion of hybrids). The high count is of seven at Seal Cove 1 Aug 2001 (CWB). This species is a regular breeder on the northern Channel Islands and has also bred recently on Santa Catalina Island (Jones and Collins unpubl. data).

Recurvirostridae

Black-necked Stilt (*Himantopus mexicanus*).* Casual spring migrant; accidental in winter. Five records: one on 6 Apr 1979 (the second for the Channel Islands; PDJ photo), one at Horse Beach 4–9 Jun 2000 (RDMcM), one at Chad's Bluff 27–28 Apr 2001 (SJK et al.), one at Lemon Tank 12–14 Jun 2003 (COK et al., BLS photo), and one at West Cove Beach 28–31 Dec 2004 (JMMcM photo). Although common on the mainland of coastal southern California, the stilt is just an occasional spring transient in the Channel Islands, with only two records each for fall and winter (Jones and Collins unpubl. data).

American Avocet (*Recurvirostra americana*).* Casual spring and fall migrant. Three spring records: one at Northwest Harbor 18 May 2002 (JTB photo) and presumably the same bird at China Beach 19–24 May 2002 (NMM et al.), two at Horse Beach 13 Mar 2004 (HAC, NW), and one at Northwest Harbor 13 Apr 2004 (HAC). Three fall records: one on 19 Sep 1975 (HLJ), one on 11 Sep 1980 (EC et al.), and six on 23 Oct 1981 (WTE). The avocet is a rare transient on the Channel Islands (Garrett and Dunn 1981), recorded from four of them (Jones and Colllins unpubl. data).

Scolopacidae

Greater Yellowlegs (*Tringa melanoleuca*).* Rare spring and uncommon fall migrant; casual winter visitor. Recorded in fall from 9 Jul to 3 Nov, in spring from 3 Mar to 13 May. There is only one winter record: 11 Jan 1997 (JHG). Although recorded only four times as of 1983 (Jorgensen and Ferguson 1984), this species is now found annually, much more often than the Lesser Yellowlegs. Many reports of the Lesser Yellowlegs have been in error.

Lesser Yellowlegs (*Tringa flavipes*).* Casual migrant. Seven fall records from 4 Aug to 12 Nov. One spring record: one at Twin Dams 22 Mar 2004 (BLS). First recorded on SCI 19–26 Sep 1978 (PDJ). Elsewhere on the Channel Islands the Lesser Yellowlegs is an occasional fall transient with only one possible spring record (Jones and Collins unpubl. data).

Solitary Sandpiper (*Tringa solitaria*).†* Very rare fall migrant. Thirteen records from 12 Aug to 23 Sep. Mearns (1907) collected one between 22 and 29 Aug 1894. The high count is of two on four dates. This species is a rare fall transient on the other Channel Islands except Santa Barbara, where it remains unrecorded (Small 1994, Jones and Collins unpubl. data).

Willet (*Catoptrophorus semipalmatus*).* Very rare fall migrant; casual in spring. Recorded in fall from 19 Jun to 17 Dec. Two recent spring records: one at Horse Beach 3 Apr 1994 (JKR); one at Lemon Tank 17 Mar 2004 (SWS et al., photo). The status of the species as we observed it on SCI differs from that described by Jorgensen and Ferguson (1984), who called it an uncommon visitor from 23 Jul to 18 May, and from that described by Garrett and Dunn (1981), who considered the Willet common to abundant through most of the year on the Channel Islands. It has been recorded from four islands (Jones and Collins unpubl. data). Although it may be common on the northern Channel Islands, this species is at best a rare visitor to SCI.

Wandering Tattler (*Heteroscelus incanus*).†* Uncommon migrant and visitor recorded in every month except June. The onset of spring migration is difficult to detect because of lingering wintering birds, but the species typically increases in early April and occurs primarily to 5 May, exceptionally as late as 19 May (2002, one at Cave Canyon, NMM). Fall migrants arrive from 19 July, exceptionally as early as 7 July (2002, one in Wilson Cove, JTB). The high count is of 32 on China Beach 4 Aug 2002 (BLS, AMC).

Spotted Sandpiper (*Actitis macularius*).†* Uncommon migrant and winter visitor. Recorded in all months, but most numerous along rocky shorelines during fall, particularly on the east side and at the south end of SCI. Found rarely at Lemon Tank during migration. The onset of spring migration is difficult to detect, but spring migrants occur primarily from 14 Mar to 14 May, exceptionally as late as 12 June (2001, one at Lemon Tank, JTB). Fall migrants are recorded from 23 Jul to 30 Nov. The high count is of 25 on beaches along the island's east side 19 Oct 2003 (JAM et al.).

Whimbrel (*Numenius phaeopus*).* Fairly common migrant and winter visitor; casual in summer. Recorded in spring as late as 1 May, in fall as early as 27 Jun. One summer record: three at West Cove Beach 12 Jun 1997 (JHG). Exact intervals of migration are difficult to define, but fall migrants are typically evident from mid-July through mid-October, and spring migrants appear to peak in late March and early April but are often gone by late April. This species is found primarily around the north end of the island, where it forages in the iceplant and short vegetation on the dunes at the airfield. It is less common on beaches during migration, although it sometimes occurs on China and Chenetti beaches at the south end of the island. Wintering birds typically gather in a single flock along the north coast. The high count is of 50 on five dates (1 Mar to 1 May).

Long-billed Curlew (*Numenius americanus*).* Very rare fall migrant; casual spring migrant and winter visitor. Nine fall records of single individuals from 24 Jul to 30 Oct. Three spring records from 18 Feb to 30 Apr, none of them recent. One winter record: one around West Cove Beach and the airfield 15 Nov 2001–16 Mar 2002 (CWB et al., photo). A report of 14 on 18 Feb 1981 lacks details and perhaps pertains to the more common Whimbrel. First recorded 9 Sep 1972 (HLJ), the Long-billed Curlew often associates with Whimbrels on dunes and sandy beaches. It is a rare year-round visitor on the remaining Channel Islands (Garrett and Dunn 1981).

Marbled Godwit (*Limosa fedoa*).* Rare fall migrant; casual at other seasons. Recorded in fall from 24 Jul to 28 Nov. Two spring records: one at Pyramid Point 26 Apr 1996 (RTP); one at Bird Rock 27–28 May 2002 (NMM, FB). One summer record: one at Northwest Harbor 18 Jun 1996 (RTP). One winter record: two at West Cove Beach 23 Dec 1998 (DMC). The high count is of 18 flying south past West Cove Point 29 Aug 2002 (BLS, AMC). Garrett and Dunn (1981) called the Marbled Godwit "less numerous" on the Channel Islands than on the southern California coast, and our data suggest that this is perhaps an understatement.

Ruddy Turnstone (*Arenaria interpres*).†* Uncommon migrant and winter visitor; casual in summer. Recorded in all months. Recorded primarily in spring from 2 Mar to 11 May, exceptionally as late as 12 Jun (1997, five on West Cove Beach, JHG) and 20 Jun (Jorgensen and Ferguson 1984), in fall from 18 Jul to 24 Nov, exceptionally as early as 9 Jul (1997, nine on West Cove Beach, JHG). The high count is of 25 near West Shore 24 Apr 1996 (PAA). Garrett and Dunn (1981) described the Ruddy Turnstone's season of occurrence on the Channel Islands as August to April; summer records from SCI pertain to oversummering nonbreeders.

Black Turnstone (*Arenaria melanocephala*).†* Fairly common migrant and winter resident recorded from 12 Jul through 26 Apr. The high count is of 75 on West Cove Beach 17 Nov 2002 (BLS). In contrast to the Ruddy Turnstone, no Black Turnstones have remained through the summer on SCI.

Surfbird (*Aphriza virgata*).* Casual migrant. Five fall records: one at China Cove 21 Oct 1995 (RTP), one at China Cove 8 Dec 2000 (RTP), a flock of eight videotaped at Mail Point 15 Nov 2001 (EAU), one at the China Point gull roost 25 Jul 2003 (BLS, RSAK), and two at West Cove Point 28 Jul 2004 (BLS et al.). One spring record: two at Eel Point 2 Apr 2002 (BLS, AMC). The dearth of records for this species on an island surrounded by rocky shoreline suggests a purely coastal distribution, with little migration likely this far offshore. Garrett and Dunn (1981) and Small (1994) described the Surfbird as an uncommon transient on the Channel Islands; Jones and Collins (unpubl. data) consider it an occasional to fairly common transient. It may be more common on the northern Channel Islands than on SCI.

Red Knot (*Calidris canutus*). Casual migrant. Four fall records: one on 28 Jul 1973 (HLJ), one on China Beach 7 Dec 1996 (RTDeG), one on China Beach 4 Aug 2001 (BLS, ELK), and one on Chenetti Beach 12 Aug 2001 (BLS). One spring record: one on 4 May 1974 (WC, RS). Garrett and Dunn (1981) reported five records for the Channel Islands, presumably including the first two from SCI. Jones and Collins (unpubl. data) consider the species an occasional spring and fall transient with only two winter records for the Channel Islands.

Sanderling (*Calidris alba*).†* Fairly common migrant and winter resident. Recorded in fall from 22 Jul, exceptionally as early as 5 Jul (2002, 15 at Northwest Harbor, JTB); spring departure is typically by 26 Apr, exceptionally as late as 11 May (2000, 10 on West Cove Beach, KJM, RSR). The high count is of 100 on China Beach 30 Jan 1997 (JAM). Although the Sanderling is uncommon as an oversummering nonbreeder on the beaches of southern Calfornia (Garrett and Dunn 1981), we have no summer records as of yet for SCI.

Western Sandpiper (*Calidris mauri*).†* Uncommon fall and very rare spring migrant. Recorded in fall from 29 Jun to 12 Oct, exceptionally as early as 16 Jun (2004, one at West Cove Beach, SWS). In spring, only nine records from 2 to 29 Apr, exceptionally as early as 13 Mar (2004, three on West Cove Beach, HAC). Two possible winter records: Dec 1908 (Linton 1909) and one at Cave Beach 16 Feb 2004 (SWS). The high count is of 15 at Lemon Tank 27 Aug 2004 (HAC). Jorgensen and Ferguson (1984) categorized this species as rare to uncommon, and while it is certainly no longer considered rare, its status has likely changed because of increased observer effort. The Western Sandpiper is the most commonly encountered "peep" on SCI, particularly on sandy beaches, where it drastically outnumbers the Least Sandpiper.

Least Sandpiper (*Calidris minutilla*).†* Casual spring and uncommon fall migrant. Recorded in fall primarily from 8 Jul to 3 Oct, exceptionally as late as 25 Oct (2003, one at Lemon Tank, BLS). Two spring records: four at Eagle Canyon 14 Mar 2004 (SWS); one at West Cove Beach 11 Apr 2004 (SWS). One winter record: two collected by Linton (1909) on 12 Dec 1908. The high count is of six at Lemon Tank 2 Sep 2004 (JMMcM, SEW). In migration, this species is found regularly at Lemon Tank and, during wet years, in vernal and cattle ponds. It is uncommon on sandy beaches, where it is outnumbered by the Western Sandpiper.

Baird's Sandpiper (*Calidris bairdii*).* Very rare fall migrant. Fifteen fall records from 4 Aug to 10 Oct. Typically found at Lemon Tank or (in wet years) ephemeral ponds, occasionally on beaches. The high count is of four at Lemon Tank 20–22 Oct 2004 (JMMcM et al.). All birds identified to age have been juveniles.

Pectoral Sandpiper (*Calidris melanotos*).* Very rare fall migrant. Recorded from 23 Aug to 30 Oct. The high count is of three at Lemon Tank 4 Sep 2001 (JTB). All individuals have been juveniles. Found at Lemon Tank and ephemeral ponds, decidedly more frequently during wet years, when cattle ponds provide good stopover habitat in late summer.

Dunlin (*Calidris alpina*).* Rare fall migrant; very rare spring migrant; casual winter visitor. Recorded in fall from 18 Sep to 29 Dec. Three spring records: one on West Cove Beach 2 Mar 1993 (WTE), one on West Cove Beach 15 May 2001 (CWB), and the high count of 200 migrating past China Point 24 Apr 2004 (BLS et al). One winter record: one at West Cove Beach 3 Feb 2004 (BLS, SWS). The large number observed migrating past the island in spring suggests that this species typically bypasses SCI, rarely stopping during migration.

Buff-breasted Sandpiper (*Tryngites subruficollis*).* Casual fall migrant. Three records, all of juveniles: one at Lemon Tank 2–7 Sep 2001 (BLS et al.), one at Lemon Tank 4–25 Sep 2002 (BLS et al.; Figure 26), and one at Horse Beach 13–29 Sep 2003 (HAC et al.). The latter record might pertain to two individuals, as the birds were seen nearly two weeks apart at the same location. There are just four other records for the Channel Island (Jones and Collins unpubl. data).

Short-billed Dowitcher (*Limnodromus griseus*).* Very rare fall migrant; casual in spring. Seven recent fall records from 12 to 29 Jul. Jorgensen and Ferguson (1984) reported seven sightings from 24 Aug to 20 Oct; because of the difficulty of identifying dowitchers, some of those may have been of misidentified Long-billed. Two spring records: four on 28 Apr 2001 at Horse Beach (RTP); one photographed at the SHOBA pond 13 Mar 2003 (BLS, SL). The high count is of five at Northwest Harbor 19 Jul 2002 (JTB). Our data reflect the assessment of this species over the remaining Channel Islands as a very rare transient with the majority of records from fall (Dunn and Garrett 1981).

Long-billed Dowitcher (*Limnodromus scolopaceus*).* Casual spring and rare fall

migrant. Recorded in fall from 21 Jul to 25 Oct. One winter record: 5 Dec 1978 (PDJ). One spring record: one at Lemon Tank 17–18 Mar 2004 (SWS et al.). The Long-billed is encountered more frequently than the Short-billed Dowitcher, often along the freshwater shores of Lemon Tank and at vernal ponds during wet years. The high count is of 20 flying south overland near the eucalyptus tree 4 Oct 2002 (BLS, RGD).

Wilson's Snipe (*Gallinago delicata*).†* Very rare fall migrant; casual in spring. Twelve fall records from 17 Aug to 5 Nov; two spring records: one on 26 May 1979 (PDJ); one at Twin Dams 7 Apr 2004 (JMMcM et al.). The high count is of two on three dates. Garrett and Dunn (1981) reported this species as wintering on Santa Catalina Island, but it remains very rare on SCI, possibly because of the lack of suitable habitat in most years.

Wilson's Phalarope (*Phalaropus tricolor*).* Casual migrant. Four records: 28 Jul 1973 (HLJ), 11 Sep 1980 (EC et al.), one at the pond near REWS Road 1 Apr 2004 (JL et al.; Figure 27), and one female at Lemon Tank 25 June 2004 (BLS, WMF). This species is an occasional fall and rare spring migrant recorded from five of the Channel Islands (Jones and Collins unpubl. data).

Red-necked Phalarope (*Phalaropus lobatus*).* Rare fall migrant. Recorded from 10 Jul through 9 Sep. Sometimes easily seen from shore at China Point and West Cove Point as tight flocks fly past, heading south. The high count is of 129 migrating past West Cove Point 20 Jul 2003 (BLS). Phalaropes tentatively identified as this species were migrating far off China Point 9–24 Apr 2004 (BLS et al.). Garrett and Dunn (1981) described the Red-necked Phalarope as a numerous spring migrant "offshore," but the lack of spring records from SCI might suggest that much of this species' migration takes place between SCI and the mainland and perhaps not very far offshore.

Red Phalarope (*Phalaropus fulicaria*).†* Very rare migrant and winter visitor. Recorded from 10 Aug to 17 May, exceptionally as early as 25 Jul (2003, six off China Point, BLS). The high count is of 10 moving past West Cove Point 24 Nov 2002 (BLS, ELK). This species is identified less frequently than the Red-necked Phalarope, but its true status around SCI may be confounded by difficult identification at a distance. During invasion years large concentrations have been noted around the other Channel Islands, such as the 30,000 off Santa Cruz Island 28 May 1980 (Garrett and Dunn 1981), suggesting that in some years this species is likely very common.

Laridae

South Polar Skua (*Stercorarius maccormicki*).# Casual migrant. Three records: one immature flying north past West Cove Point 8 Sep 2002 (BLS), one molting dark-morph adult flying past West Cove Point 17 Jun 2003 (ELK et al.), and one flying north past China Point 7 Sep 2003 (BLS). This species is uncommon to rare around the Channel Islands, with no other land-based observations (Jones and Collins unpubl. data).

Pomarine Jaeger (*Stercorarius pomarinus*).* Uncommon fall migrant and winter resident. Recorded primarily from 28 Aug to 30 Apr, exceptionally as early as 4 Aug (2002, one light-morph adult off China Point, BLS, AMC) and 10 Aug (2003, one adult off China Point, RSAK) and as late as 23 May (one dark morph off West Cove Point, CRK). The Pomarine Jaeger was first recorded 18 Feb 1981 (EC, WTE), and as of 1983 there were only two records (Jorgensen and Ferguson 1984). More recently, however, we have seen it regularly from shore during migration, especially during large movements of gulls. The high count is of 72 flying past West Cove Point 4 Nov 2001 (BLS, AMC). Most records are of light-morph adults, but the dark morph occurs regularly. Juveniles and subadults are relatively rare, typically occurring from 29 Sep

to Dec, exceptionally as early as 7 Sep (2003, one juvenile with 15 adults off China Point, BLS). Small flights of juveniles and subadults have been noted in November.

Parasitic Jaeger (*Stercorarius parasiticus*).* Uncommon fall migrant and rare winter visitor. Recorded primarily from 27 Sep to 31 Mar, exceptionally as early as 4 Sep (2001, two off China Point, BLS). Although it was first recorded on 9 Sep 1976 (HLJ), and Jorgensen and Ferguson (1984) listed only three records, we have seen the Parasitic Jaeger from shore regularly during migration, though in numbers far fewer than those of the Pomarine Jaeger. The high count is of 23 flying past West Cove Point on 4 Nov 2001 (BLS, AMC). One juvenile was chasing a Royal Tern and vocalizing over land at Chenetti Beach on 9 Nov 2001 (BLS). Like the Pomarine Jaeger, the Parasitic is often seen moving offshore with large flights of gulls. Most records pertain to adults of the light morph; the dark morph is relatively rare. Juveniles and subadults are also rare, but small flights of them have been noted in November.

Long-tailed Jaeger (*Stercorarius longicaudus*). Very rare fall migrant. Five records of adults migrating south off West Cove Point and other coastal promontories from 30 Aug to 18 Oct. Three records of immatures: one juvenile off Eel Point 8 Sep 2001 (BLS, AMC), one immature off West Cove Point 19 Sep 2002 (BLS, AMC), and the wings and tail of a juvenile found at West Cove Point 30 Sep 2002 (BLS). A probable immature Long-tailed Jaeger was with a large southerly movement of 126 jaegers off West Cove Point 4 Nov 2001 (BLS, AMC), 30 of which were unidentified. First recorded 30 Aug 2001 (BLS et al.). Garrett and Dunn (1981) described this species' propensity for associating with flocks of Arctic Terns. The Arctic Tern is casual off SCI, perhaps moving farther offshore and perhaps explaining the rarity of the Long-tailed Jaeger. There are single reports "near" Santa Rosa and Anacapa islands, but there are no other land-based observations from the Channel Islands (Jones and Collins unpubl. data).

Laughing Gull (*Larus atricilla*).* Accidental. One record: an adult flying north past Wilson Cove 3 Jun 2001 (BLS, JTB). Two hypothetical records of single adults on 31 Jul 1980 (PDJ) and 16 Aug 1980 (PDJ). Jorgensen and Ferguson (1984) reported that the birds had dark wingtips but recognized that confusion with Franklin's Gull (*L. pipixcan*) was possible. Garrett and Dunn (1981) mentioned a juvenile that followed a boat from San Diego roughly 50 km toward SCI on 9 Sep 1972. There are but nine records for the Channel Islands (Jones and Collins unpubl. data).

Bonaparte's Gull (*Larus philadelphia*).* Very rare migrant and winter visitor. Five fall records: one adult 19 Dec 1976 (HLJ), one on 4 Dec 1981 (BJ; wing found 19 Feb 1982, HLF), one adult foraging in Wilson Cove 8 Nov 2001 (BLS photo, AMC), one immature at West Cove Beach 13–17 Nov 2002 (JHP et al.), and one adult off West Cove Point 18 Nov 2002 (BLS). Four spring records: a wing found 5 May 1974 (WC, RS), one adult 20 Apr 1981 (BJ), one adult near Wilson Cove 27 Mar 2001 (JTB), and one adult at West Cove Beach 4–8 Apr 2004 (SWS, BLS photo). Although Garrett and Dunn (1981) reported this species as irregular around the Channel Islands, our data suggest it perhaps occurs more rarely than previously indicated, at least around SCI. Jones and Collins (unpubl. data) find this species absent in some years around the Channel Islands but common in others. Further observations are required to determine Bonaparte's Gull's true status on SCI.

Heermann's Gull (*Larus heermanni*).†* Common year-round visitor. Numbers increase by late June and decrease in late winter when many return to Mexican breeding colonies. Flocks of northbound birds can be seen from West Cove Point throughout the summer. Numbers typically remain high into the winter but thin out by February. Immature birds can be found year round. Breeding on SCI is not suspected. The high count is of 200 on Chenetti Beach 12 Aug 2001 (BLS).

Ring-billed Gull (*Larus delawarensis*).* Casual migrant and winter visitor. Only two well-documented records: one first-winter bird at China Point 4 Oct 2003 (BLS; Figure 28) and likely the same individual seen the next day off West Cove Point (BLS); one first-winter bird at West Cove Beach 17–18 Oct 2004 (BLS, JMMcM). Four other reports are likely correct, though not supported with adequate documentation: one immature 26 Mar 1915 (A. B. Howell unpubl. notes), five including both adults and subadults 1 Nov 1975 (HLJ), one 8 Oct 1980 (REW), and one adult on West Cove Beach 14 May 1999 (DMC). Other reports of up to 40 on SCI are clearly erroneous. Confusion with the similar California Gull is likely the source of many misidentifications. Jones and Collins (unpubl. data) have only 10 records for the Channel Islands.

California Gull (*Larus californicus*).†* Common migrant and winter visitor. Recorded primarily from 31 Aug to 3 Apr, exceptionally as late as 24 Apr (2004, three at China Point, SWS et al.). Numbers fluctuate substantially from year to year, with high counts of up to 7000 along 3 km of shoreline 2 Mar 1979 (PDJ) and 5000 migrating past West Cove Point 4 Mar 2002 (BLS, ELK).

Herring Gull (*Larus argentatus*). Rare to uncommon fall migrant and winter visitor; casual in summer. Recorded primarily from 28 Oct to 17 Feb, exceptionally as early as 10 Sep (1975, one remained until 12 Sep, PO). One summer record: an adult at West Cove Beach 23–25 Jul 2004 (BLS et al.). One hypothetical spring record: two adults on 5 Apr 1915 (Howell 1917); given the lack of knowledge regarding gull plumages at that time, and the lack of recent spring records, it seems likely that the birds were misidentified. The high count is of 40 on 9 Nov 1975 (PDJ). Herring Gulls are typically found among Western Gulls when they loaf in large flocks on SCI's beaches. Large numbers occasionally recorded from the northern Channel Islands, such as the 300–500 adults counted on San Miguel Island 24 Mar 1973 (Garrett and Dunn 1981), suggest this species may be of more regular occurrence farther north.

Thayer's Gull (*Larus thayeri*). Casual migrant and winter visitor. Four records, all of single first-winter birds: 10 Dec 1976 (HLJ), 25 Mar 2001 (BLS), West Cove Point 5 Mar 2002 (BLS, JHP), and Seal Cove 21 Mar 2002 (BLS, ELK). Thayer's Gull might occur more often during invasion years, especially on the northern Channel Islands, where it is a rare winter visitant (Garrett and Dunn 1981, Jones and Collins unpubl. data).

Western Gull (*Larus occidentalis*).†* Common breeder and resident. Nests in small numbers at Seal Cove, Bird Rock, and on scattered ledges around the island. Since 2002 Western Gulls have nested on rooftops of navy barracks at Wilson Cove. Numbers of nests found at various SCI colonies include one near the mouth of Cave Canyon 9 Jun 1973 (HLJ), 23 at Mail Point 13 Jun 1979 (PDJ), 38 on Bird Rock 17 May 1980 (HLF, PDJ), 20 at Seal Cove 14 Jun 1980 (PDJ), 30 at Bird Rock 15 Jun 2002 (BLS, JTB), and 13 at Seal Cove 7 Jul 2003 (BLS, RSAK). Winter numbers fluctuate, presumably with the abundance of food, and the resident population may be augmented by northern birds. Reports of color-banded individuals in winter are common, presumably moving into the area from the Farallones (P. Pyle pers. comm.). The high count is an estimated 1000 individuals feeding off China Point 8 Feb 2002 (BLS).

Glaucous-winged Gull (*Larus glaucescens*).* Uncommon migrant and winter visitor. Recorded from 18 Nov to 30 May. Numbers fluctuate from year to year, but the species is never common. All birds identified to age have been in their first winter. The high count is of five on Chenetti Beach 13 Jan 2002 (BLS).

Sabine's Gull (*Xema sabini*). Casual migrant. One record: three (two adults and one juvenile) flying south past China Point 30 Sep 2003 (BLS, RSAK). Likely occurs

more frequently than known on the basis of observations from shore because the species occurs regularly in the channel between SCI and the mainland (M. Iliff and G. McCaskie pers. comm.). Garrett and Dunn (1981) considered Sabine's Gull a fairly common spring transient and an uncommon fall transient off southern California. This species' rarity on SCI suggests it may migrate farther offshore during fall or closer to the mainland during spring.

Black-legged Kittiwake (*Rissa tridactyla*).†* Rare migrant and winter visitor; in some years a fairly common winter visitor and spring migrant. Recorded primarily from 14 Dec to 12 May, exceptionally as late as 28 May (1975, three immatures, HLJ). The kittiwake was first recorded on the basis of a specimen taken 18 Jan 1969 (EAC), and as of 1983, there were only five records for SCI (Jorgensen and Ferguson 1984). During invasion years, however, this species can be seen easily from shore. Most records are of first-winter birds, but adults are also observed. During influxes, kittiwakes often roost with other gulls on offshore rocks at China Point. The high count is of 37 migrating past West Cove Point 11 Feb 2002 (BLS).

Caspian Tern (*Sterna caspia*).# Casual migrant and visitor. We accept nine records from 8 May to 27 Aug; five of these are from August. The first was 9–27 Aug 1980 (HLF). Also, a tern seen briefly from West Cove Point 31 Mar 2001 was likely a Caspian (BLS). Other reports may be of misidentified Royal Terns. The high count is of two at Box Canyon 1 Aug 1997 (JAM, SL). The Caspian is seen rarely, if at all, over the open ocean (Garrett and Dunn 1981). Jones and Collins (unpubl. data) consider it a casual transient on the Channel Islands. An interesting influx of this species occurred on Santa Catalina Island during the late spring and summer of 2004 when up to 15 were at Cat Harbor (L. S. Cesh pers. comm., photo).

Royal Tern (*Sterna maxima*).†* Common migrant and visitor. Present year round as a nonbreeder. This species shares a pattern with Heermann's Gull, of birds arriving in early summer during postbreeding dispersal from Mexican breeding colonies. Peak counts are typically during the winter; the highest is of 75 at Northwest Harbor 17 Dec 1997 (JAM, SL). The Royal Tern is scarcest during late spring, when most birds present are immature.

Elegant Tern (*Sterna elegans*).# Casual fall migrant. Seven records from 12 Aug to 15 Oct, the first 16 Aug 1969 (HLJ). The high counts are of 19 on 12 Aug 1981 (HLF) and of five adults feeding in the kelp line off West Cove Point 2 Oct 2004 (BLS et al.). Careful scrutiny of feeding flocks of Royal Terns during fall migration in recent years has rarely produced the Elegant. Garrett and Dunn (1981) considered it casual only around Pyramid Cove on SCI. Jones and Collins (unpubl. data) consider it an uncommon to rare postbreeding visitor to the Channel Islands, perhaps an understatement considering its casual status on SCI.

Common Tern (*Sterna hirundo*).* Casual fall migrant. Five records: one 13 Sep 1975 (Garrett and Dunn 1981), three at Northwest Harbor 15 Sep 2002 (JTB photo), 31 moving south past West Cove Point 28 Sep 2003 (BLS et al.), two immatures feeding in the kelp line at West Cove Point 2 Oct 2004 (BLS), and one immature off West Cove Point 5 Oct 2004 (BLS, JMMcM). This species is not encountered with any frequency around the Channel Islands but is often found inshore over the same waters frequented by the Elegant Tern (Garrett and Dunn 1981). Interestingly, the Common has occurred with the Elegant Tern at SCI on several occasions, perhaps suggesting that local weather or food availability affect these species similarly.

Arctic Tern (*Sterna paradisaea*).# Casual fall migrant. Two records: one adult feeding along the kelp line at West Cove Point 30 Aug 2001 (BLS et al.); two adults migrating south past West Cove Point 19 Sep 2002 (BLS, AMC). Garrett and Dunn (1981) considered this species a common fall transient and uncommon late spring transient well off

the coast of southern California. The paucity of records from SCI's coastal promontories suggest that the Arctic Tern avoids landmasses on migration, that its typical migratory route is outside or inside a path intersecting SCI, or that the population has decreased or shifted its migratory route over the past 25 years. The Arctic Tern has been recorded at or near five of the Channel Islands (Jones and Collins unpubl. data).

Forster's Tern (*Sterna forsteri*). Casual migrant and visitor. Four records: one on 28 Mar 1975 (HLJ), one at Northwest Harbor 13 Oct 1995 (MAB), one off the east side of the airstrip 20 Oct 1997 (JHG), and one adult flying past West Cove Point 31 Mar 2001 (BLS). Forster's Tern is rare around the Channel Islands in general (Garrett and Dunn 1981).

Black Tern (*Chlidonias niger*).# Accidental. One record: a molting adult feeding along the kelp line at West Cove Point 5 Sep 2001 (BLS, ELK). At least formerly this species migrated over the open ocean; Garrett and Dunn (1981), however, cited no specific records for the Channel Islands. Jones and Collins (unpubl. data) have only one other Channel Islands record, near San Miguel Island.

Black Skimmer (*Rynchops niger*).* Casual migrant and visitor. Four records: three flying north off the east side 22 May 2001 (BLS et al.), one adult off China Point 30 Jul 2001 (BLS et al.), three adults (one banded) at Northwest Harbor 20 Sep 2002 (JTB; Figure 29), and one adult at Wilson Cove 30 Sep 2004 (LAA). This species was unrecorded on the Channel Islands as of 1994 (Small 1994), but there have been eight records since (Jones and Collins unpubl. data).

Alcidae

Common Murre (*Uria aalge*).* Casual visitor. Two records: one found dead on the beach 5 Aug 1981 (PDJ); two at Bird Rock 17 Feb 2002 (JTB). This species formerly bred on islets off San Miguel Island and is found sporadically in southern California's coastal waters (Garrett and Dunn 1981).

Pigeon Guillemot (*Cepphus columba*).* Casual visitor. Four records: one adult in breeding plumage off China Point 2 Jul 2001 (BLS), one photographed near Bird Rock 26–27 May 2002 (JTB), one off West Shore 15 May 2003 (CWB), and likely the same bird off Whale Point 12 Jun 2003 (FB). Although this species is a fairly common resident around the northern Channel Islands (Garrett and Dunn 1981), it is casual farther south.

Xantus's Murrelet (*Synthliboramphus hypoleucus*).†* Very rare migrant and visitor; current breeding status unknown. The northern subspecies *S. h. scrippsi* likely breeds sporadically in small numbers on offshore rocks at Seal Cove and possibly on Bird Rock and on Castle Rock near West Cove Point (Drost and Lewis 1995, Jorgensen and Ferguson 1984). It breeds regularly on Santa Barbara Island (Garrett and Dunn 1981). The history of this species on SCI is interesting. Linton (1909) collected a specimen in Dec 1908, and H. Wright reported the species again in summer 1912, but the early naturalists noted no breeding (Willett 1912). On 27 Jul 1968, off China Point, two adults were seen with a downy chick (GMcC). Subsequently, another pair was seen with a chick north of Wilson Cove on an unspecified date (HLJ). Greg Kunz and Larry Sward searched unsuccessfully for nests on 2 and 15 Apr 1977, although they heard this species' twitter calls around Seal Cove. Hunt et al. (1980) reported the first definite breeding, confirmed by an eggshell at Seal Cove 11 Jun 1977. In 1992, Carter et al. (1992) found 125 individuals during the breeding season. Hunt et al. (1980) called SCI's murrelet population "almost insignificant" and likely held in check by the abundant terrestrial predators and dearth of offshore rocks.

More recently, this species has been found with increasing regularity near SCI. We photographed two adults with a downy chick 3 km off China Point 4 Jul 2001 (Figure 30), but this species' propensity for traveling long distances over water with downy

young makes it uncertain whether this chick hatched at SCI. High counts of six off China Point 10 Apr 2004 (BLS et al.) and five seen from shore at China Point 2 Jul 2001 (BLS et al.) are exceptional, as this species is usually seen as scattered pairs. Confusion with the more common Cassin's Auklet casts doubt on some land-based records. One specimen of the southerly breeding subspecies, *S. h. hypoleucus*, was found on a road near Wilson Cove 29 Jul 1976 (RLP; SDNHM 39944).

Craveri's Murrelet (*Synthliboramphus craveri*).# Casual migrant. Two records, both of single birds off West Cove Point: 25 Jul 2003 (BLS, IR) and 27 Jul 2004 (SWS). The one in 2003 was seen both on the water and in flight and showed the dark gray underwing typical of this species. Craveri's Murrelet likely occurs more regularly, as it disperses regularly in late summer from its Mexican breeding colonies to southern California waters, where it is casual near shore (Garrett and Dunn 1981).

Ancient Murrelet (*Synthliboramphus antiquus*).† Casual migrant and winter visitor. Two recent records: one adult in breeding plumage flying north past China Point 25 Mar 2001 (BLS); one off West Cove Point 26 Nov 2003 (BLS, IR). Perhaps more common historically, as Howell (1917) reported the Ancient Murrelet as regular near shore, and Linton (1909) collected two specimens near SCI in Nov and Dec 1908. This species is perhaps more common near the mainland of southern California than it is far offshore. Such a difference may explain recent records for SCI being so few in comparison to those from mainland observation points, such as La Jolla Cove, San Diego, where the species is seen with some regularity in some years during late fall migration (Unitt 2004). Elsewhere around the Channel Islands the Ancient Murrelet is an irregular transient and winter visitant (Jones and Collins unpubl. data).

Cassin's Auklet (*Ptychoramphus aleuticus*).†* Rare migrant and visitor. Generally rare near shore though locally uncommon during spring and fall migration. Records of presumed spring migrants range from 9 Apr to 28 May, when flocks of this species are moving north past the island. Those of fall migrants range primarily from 28 Sep to 14 Nov, exceptionally as late as 21 Dec (2002, 16 flying past West Cove Point, BLS, AMC), when large numbers move south. The high count is of 125 passing by China Point 18 May 2002 (BLS et al.). Cassin's Auklet has been recorded at SCI in all months. Local movements of a few individuals are noted throughout summer, and in winter the species is seen regularly from shore. It breeds abundantly on the northern Channel Islands but not on SCI. Breninger (1904) reported a large die-off of this species, stating, "along the shores and water dead auklets were everywhere"; he did not speculate on the cause. Remains of this species were found in prehistoric middens near Whale Point, suggesting some use of the birds for food and possible historic breeding (Porcasi 1999a). A juvenile was found inside a water tank at Wilson Cove 16 Aug 2004 (HAC et al., photo).

Rhinoceros Auklet (*Cerorhinca monocerata*).†* Very rare migrant and winter visitor. Six winter records from 12 Dec to 13 Feb; one spring record: a single bird flying past China Point 11 Apr 2004 (BLS et al.); one fall record: one off China Point 29 Sep 2003 (BLS, RSAK). Unlike Cassin's, the Rhinoceros Auklet is not seen regularly as a fly-by from shore; rather, it is more likely to be encountered on near-shore boat trips. The high count is of two off China Point 18 Nov 2001 (BLS et al.) and off Pyramid Point 17 Dec 2001 (BLS et al.). The Rhinoceros Auklet is likely much more common offshore than recent records indicate, and its abundance perhaps fluctuates from year to year. Earlier, Linton (1908, 1909) collected three and found skeletons along the beach in 1907 and 1908. Garrett and Dunn (1981) considered the Rhinoceros Auklet a common visitor to waters around the northern Channel Islands and fairly common from there south to the Mexican border. Briggs et al. (1987) found a sharp increase in its numbers in southern California waters in January, February, and March.

Tufted Puffin (*Lunda cirrhata*).# Accidental. One record: one off SCI 1 June 1971 (Garrett and Dunn 1981). Although this species bred through the 1940s on the northern Channel Islands and possibly on Santa Barbara and San Nicolas islands, it subsequently vanished. A recent increase in records around five of the Channel Islands, especially San Miguel, suggests the possibility that it is once again breeding on Prince Islet near San Miguel (Jones and Collins unpubl. data).

Columbidae

Rock Pigeon (*Columba livia*).* Fairly common resident. This species is common only in Wilson Cove, where it likely breeds, but it is not seen elsewhere on the island. The current total population is perhaps less than 50 individuals. The Rock Pigeon was first recorded on 28 Jul 1973 (PDJ); Jorgensen and Ferguson (1984) described it as "rare throughout the year."

Band-tailed Pigeon (*Patagioenas fasciata*). Rare spring and very rare fall migrant; casual in summer. Eighteen spring records from 9 Apr to 30 Jun. Two summer records: one in China Canyon 12 Jul 1997 (FAJ); one at Lemon Tank 31 Jul 1997 (JAM, SL). Two recent fall records: one at Chad's Bluff 19 Sep 1995 (CEK); one at Chamish Canyon 8 Oct 2002 (AMC). Jorgensen and Ferguson (1984) reported three occurrences in fall from 9 Sep to 18 Oct. First recorded on SCI in May 1968 (MLC, JMD), this species reportedly winters on the larger Channel Islands (Garrett and Dunn 1981), although there are no winter records from SCI.

Eurasian Collared-Dove (*Streptopelia decaocto*).* Casual visitor. Two records: one at Northwest Harbor 5 Jul 2002 (JTB); one near Stone Station 4–8 Jul 2003 (KMS et al., BLS photo). This species' appearance on SCI is not surprising given its well-documented vagrancy and aggressive spread (Romagosa and McEneaney 1999). Elsewhere on the islands, there is one unsubstantiated report from San Nicolas Island (Jones and Collins unpubl. data).

White-winged Dove (*Zenaida asiatica*).* Uncommon late summer and fall migrant; very rare in spring. Approximately 102 fall records from 28 Jun to 24 Nov; 12 spring records from 11 May to 2 Jun. The peak counts are of 16 at Wilson Cove 21 Sep 2004 (BLS, HAC) and 15 at Lemon Tank 8 Sep 2001 (CWB et al.). The White-winged Dove was first recorded on SCI 9 Sep 1972 (HLJ). Garrett and Dunn (1981) considered it a rare fall transient both along the coast of southern California and on the Channel Islands, so the large numbers encountered recently on SCI suggest an increase.

Mourning Dove (*Zenaida macroura*).† Common breeder and resident. All visiting ornithologists have described the Mourning Dove as common, though they have reported few nests. One dove was building a nest on a cliff wall in Norton Canyon 1 Aug 2003 (AMG, RSAK). In summer numbers appear to decrease, likely because of flocks breaking up to breed. It is unknown whether migrants augment local populations or if the local breeders leave the island. Counts of >100 are easily achieved during late winter, early spring, and fall in the fields of *Encelia* near Horse Beach (BLS pers. obs.).

Cuculidae

Yellow-billed Cuckoo (*Coccyzus americanus*). Casual migrant. Two records: one in upper Horse Beach Canyon 18 Jun 2001 (CWB); one at Boulders North 1 Sep 2001 (HAC). In southern California this species is exceptionally rare away from its few remaining breeding sites (Garrett and Dunn 1981). Jones and Collins (unpubl. data) have just five other records for the Channel Islands.

Tytonidae

Barn Owl (*Tyto alba*).†* Uncommon breeder and resident. Found in canyon caves by day and hunting upland terraces by night (Cooper et al. 2003, Condon et al. 2005). Condon et al. (2005) conducted nocturnal spot-lighting surveys for owls on SCI from Oct 2001 to Oct 2002. Of the 734 owls detected, 561 were Barn Owls, occurring year round. For hunting, Barn Owls avoid areas of extensive cactus. They have been noted nesting in an old barn at VC3 by Cody and Diamond (unpubl. data) and at VC3 from 1994 to 1999 by navy public-works personnel. On 20 Jul 2001, a dependent juvenile was with an adult in Wallrock Canyon (BLS, SPF). In years when numbers of rats and deer mice are reduced, Barn Owls die off, and adults are seen foraging throughout the day in the island's grasslands. The Barn Owl is a common resident on all the Channel Islands except San Nicolas (Garrett and Dunn 1981). The high count is of 70 from 2 to 4 Oct 2001 (BLS, AMC).

Strigidae

Burrowing Owl (*Athene cunicularia*).† Uncommon migrant and winter visitor. This species typically arrives on SCI in early October and remains through late March (range 5 Sep–14 Apr; Cooper et al. 2003, Condon et al. 2005). At this season it can be found fairly easily along dirt roads, where it forages for rodents. Charles H. Townsend collected SCI's first two recorded Burrowing Owls 22 Jan 1889 (USNM 117628, 117629). Howell (1917) called the species a resident, but breeding has since been reported only once on SCI, when young were found in a burrow in Larkspur Canyon during summer 1975 (Jorgensen and Ferguson 1984). Subsequent nest searching has proven fruitless (BLS, AMC). The Burrowing Owl has been considered resident on Santa Barbara and Santa Catalina islands and an occasional breeder on SCI (Garrett and Dunn 1981, Small 1994). Standardized owl surveys from Oct 2001 to Oct 2002 yielded Burrowing Owls on 47 of 104 surveys and produced the high count of 33 from 2 to 4 Oct 2001 (Condon et al. 2005).

Long-eared Owl (*Asio otus*).†* Casual visitor. Four recent records: one roosting in oaks at Vista Overlook 30 Mar 2001 (BLS, JTB), one hunting at Horse Beach 29 Nov 2001 (TJW, JTB), one foraging in the dunes near the airfield 4 Mar 2002 (BLS, AMC), and one foraging around the buildings at Wilson Cove 20 Jul 2002 (BLS, AMC). Possibly a more common migrant on SCI than records indicate. This species' strictly nocturnal habits and the difficulty of distinguishing it in flight from the more frequently encountered Short-eared Owl (*A. flammeus*) may account for the paucity of records. Earlier, Linton (1909) collected a single individual 20 Nov 1908 (MCZ 57662) and reported several more in wooded canyons. This species has nested once on Santa Catalina Island and occurs as a rare transient and winter visitor on the other islands (Garrett and Dunn 1981).

Short-eared Owl (*Asio flammeus*).† Rare migrant and winter visitor. Recorded primarily from 20 Oct to 9 Feb, exceptionally as early as 4 Oct (2001, one at Horse Beach Canyon, BLS et al.) and as late as 28 Mar (1993, one near Horse Canyon, DKD). There is a distinct peak in late fall and early winter. The Short-eared Owl was first recorded on SCI 3 Mar 1979 (PDJ, JLa), and as of 1983 there were only two records for the island, but currently the species occurs regularly, in numbers varying cyclically. The high count is of 13 between Stone Station and Wilson Cove 13 Nov 1997 (JAM et al.). There are anecdotal reports of >25 foraging between Stone Station and Wilson Cove during some winters (SL, JAM pers. comm.).

Caprimulgidae

Common Poorwill (*Phalaenoptilus nuttallii*). Uncommon migrant and casual winter visitor. Recorded from 30 Sep to 2 May. Two winter records: one bird heard

calling at Wilson Cove 1 Jan 1997 (BJR); one on Ridge Road 1 Jan 1999 (TRM). There were only three records as of 1983 (Jorgensen and Ferguson 1984), but during migration this species is now seen regularly on dirt roads, likely a result of increased predator-control efforts that include spot-lighting surveys. The high count is of 13 on 15 Mar 2003 (RGD). As a breeder this species is absent from the Channel Islands; it occurs primarily as a fall migrant and winter visitor on the larger islands (Garrett and Dunn 1981).

Apodidae

Vaux's Swift (*Chaetura vauxi*).* Very rare fall migrant; casual spring migrant. Eight fall records from 6 Sep to 21 Oct. Two spring records: one photographed at Northwest Harbor 25 May 2002 (JTB); one near West Shore 25 Apr 2003 (CWB). The high count is of three on 22 Sep 1978 (PDJ, JLa). Vaux's Swift probably occurs more regularly than records suggest, particularly in fall when it may go unnoticed with large flocks of White-throated Swifts. Confusion with the Chimney Swift (*C. pelagica*) is possible, and in lack of a specimen from SCI these birds might be better recorded as unidentified *Chaetura* swifts.

White-throated Swift (*Aeronautes saxatalis*).* Fairly common breeder and resident. Found foraging over steep cliff faces along interior canyons as well as around sea-cliffs. Apparent copulation and regular visits to presumed nest sites have been observed at Seal Cove during the spring (BLS, AMC). Grinnell (1897a) reported swifts entering and leaving crevices at Pyramid Cove, a site the birds still use (BLS). Linton (1908) reported this species entering crevices at Wilson Cove 7 Mar 1907, but nesting activity has not been reported there since. Other observations of breeding behavior are of copulating pairs near Eagle Canyon 2 May 1974 (WC, JLa, RS) and at Seal Cove 30 Apr 1980 (PDJ). Residents can be difficult to find during winter, but whether this species leaves the island to some degree at this season is unclear. The high count is of 88 over lower Bryce Canyon 8 Nov 1998 (TRM).

Trochilidae

Black-chinned Hummingbird (*Archilochus alexandri*). Casual migrant. Two records of adult males: one in Chamish Canyon 20 May 2001 (BLS); one at Lemon Tank 4 Sep 2002 (BLS, CRK). Three other reports of female or immature *Archilochus* hummingbirds likely pertain to this species: one at Lemon Tank 12 Aug 2001 (BLS, AMC), one in Wallrock Canyon 31 Aug 2001 (BLS, SPF), and one at Lemon Tank 9 Oct 2003 (BLS, ELK). There were no other records for the Channel Islands as of 1994 (Garrett and Dunn 1981, Small 1994); Jones and Collins (unpubl. data) have reviewed dozens of Channel Island reports, finding only one to be acceptable.

Anna's Hummingbird (*Calypte anna*).* Uncommon migrant and winter visitor; breeding status unclear. Reported primarily from 4 Oct to 29 May, exceptionally as early as 31 Aug (2001, one female in Wallrock Canyon, BLS). In winter, Anna's Hummingbird is the most common hummingbird on SCI, and it can be found regularly during late fall and early spring. Howell (1917) reported one collecting cotton from his skinning table 15 Mar 1915, indicating a possible breeding attempt. A male was defending a territory around a patch of *Baccharis* 29 Apr 2004 (SWS). Anna's Hummingbird is resident on Santa Cruz and Santa Catalina islands and was considered an occasional transient on the other Channel Islands by Garrett and Dunn (1981). Our data, however, suggest it is now of more common occurrence on SCI.

Costa's Hummingbird (*Calypte costae*).* Casual migrant. Seven spring records of adult males from 2 Mar to 27 May. Two fall records, both of females at Lemon Tank: 30 Sep 2003 (BLS, RSAK) and 6 Aug 2004 (BLS et al. photo). First recorded 30 Mar 1897 (Grinnell 1897). Confusion with the immature and female plumages of the

Anna's and Black-chinned hummingbirds might account for the relative scarcity of records. Costa's Hummingbird has bred once on Santa Barbara Island; otherwise it occurs on the Channel Islands as an uncommon transient (Garrett and Dunn 1981).

Calliope Hummingbird (*Stellula calliope*).* Accidental. One record: one adult male netted and released 3 May 1974 (WC, RS). There are only five other records for the Channel Islands (Jones and Collins unpubl. data).

Rufous Hummingbird (*Selasphorus rufus*). Rare spring and casual fall migrant. Fourteen spring records from 16 Mar to 20 May, exceptionally as early as 12 Feb (1981, one male, EC, WTE), with migrants peaking in April. One fall record: one adult male in Chamish Canyon 11 Jul 2002 (JHP). As of 1983, there were only two records (Jorgensen and Ferguson 1984). Fall migrants are likely overlooked because of the difficulty of distinguishing immatures and females from the resident Allen's Hummingbird.

Allen's Hummingbird (*Selasphorus sasin*).†* *Contributed by Robb S. A. Kaler.* Common breeder; year-round status unclear. Subspecies *S. s. sedentarius* is a common resident on all of the Channel Islands except San Nicolas and Santa Barbara, which it visits occasionally. The type specimen is an adult male collected on SCI at Chenetti (Smuggler's) Cove 2 Apr 1889 (Grinnell 1929; MVZ 33018). The principal difference between *S. s. sedentarius* and *S. s. sasin* is the larger size of *sedentarius*, especially of the bill. Pyle (1997) reported the rectrices of adult male *sasin* to average blacker in the tip than in *sedentarius* and those of female and juvenile *sasin* to average more orange, with less green and white, than in *sedentarius*.

The movements of this species on SCI are poorly understood and are complicated by its apparent occurrence year round. Interestingly, we have no records for July and August, perhaps simply a lack of consistent reporting but possibly an indication that this species emigrates from SCI in summer. Records resume in mid fall, primarily from late September and early October, and continue through early June. Jorgensen and Ferguson (1984) considered Allen's Hummingbird a year-round resident but commented on the dearth of winter records. Garrett and Dunn (1981) acknowledged the seasonal movements of this species on some Channel Islands and suggested that it is possible that some birds make small-scale movements to the mainland in winter. On the mainland, eucalyptus groves and other winter-blooming ornamental plants provide an ample supply of nectar when native nectar supplies are most limiting.

Allen's Hummingbird breeds from late February through May. Our earliest nesting record is of two nests with eggs in Horse Canyon 25 Feb 1997 (JAM). The dearth of nesting records is surprising given the abundance of this species on SCI.

Several hummingbird-pollinated flowers are found on SCI, including the island mallow, island snapdragon (*Galvesia speciosa*), island monkeyflower (*Mimulus flemingii*), and island paintbrush. These plants rely on Allen's Hummingbird to some degree, as other hummingbirds are uncommon.

Alcedinidae

Belted Kingfisher (*Ceryle alcyon*).†* Uncommon migrant and winter visitor; casual in summer. Recorded singly from 25 Jul to 4 Apr. A female spent the summer of 2003 in Wilson Cove (BLS). Numbers increase during fall with the arrival of migrants and continue through the winter. The Belted Kingfisher is frequently found fishing from the rocky cliffs on the east side of SCI.

Picidae

Lewis's Woodpecker (*Melanerpes lewis*). Casual migrant. Five fall records of single birds: in China Canyon 14 October 1997 (JHG), at Wilson Cove then at the old nursery 13–15 October 2001 (CRK, JTB), at Chukit Canyon 13 Oct 2004 (JFF), at

Eagle Canyon 13 Oct 2004 (CLD), and at Chalk Curve 30 Oct 2004 (BLS, LAA). One spring record: one on 8 Apr 1972 (Leatherwood and Coulombe 1972). Lewis's Woodpecker is an irregular winter visitor to Santa Cruz and Santa Catalina islands and known from the other Channel Islands from scattered sightings only (Garrett and Dunn 1981, Jones and Collins unpubl. data).

Acorn Woodpecker (*Melanerpes formicivorus*).* Very rare migrant and visitor. First noted 19 Sep 1978 (PDJ), this species had been recorded only three times as of 1983 (Jorgensen and Ferguson 1984). Currently the Acorn Woodpecker is a rare migrant to SCI, possibly dispersing from Santa Catalina Island where it is resident. It is decidedly more frequent in fall, though records extend from 19 Sep to 4 May. It is typically found in oak groves in east-side canyons, particularly at Vista Overlook and in Burns Canyon. The high count is of four on 21 Oct 1978 (PDJ). In 2003, a pair was in Vista Canyon year round though not confirmed breeding; by 2004 it was gone. The Acorn Woodpecker invaded Santa Cruz Island between 1927 and 1930 (Hoffman 1931), became a widespread breeder there, and subsequently colonized Santa Catalina Island in 1955 (Miller 1955). Its increased frequency on SCI suggests a coming attempt at colonization, although there may not be enough oaks to support a resident population.

Red-naped Sapsucker (*Sphyrapicus nuchalis*).† Casual migrant. Three records: two collected above Mosquito Cove 11 Oct 1907 (Linton 1908; MCZ 316653, 316654; reported in error as *S. ruber* by Jorgensen and Ferguson 1984), one female in Cave Canyon 16 Nov 1996 (JHG), and one male in China Canyon 15 Oct 1997 (JHG, JAM). The Red-naped Sapsucker has been reported on three other of the Channel Islands as an occasional winter visitor (Jones and Collins unpubl. data).

Red-breasted Sapsucker (*Sphyrapicus ruber*). Casual migrant and winter visitor. Five records of single birds: in Chenetti Canyon 7 Oct 1998 (TRM), at Lemon Tank 20 Oct 2001 (JHP, HAC), at Lemon Tank 10–13 Oct 2003 (BLS et al.), in Cave Canyon 7–27 Mar 2004 (BLS et al.), and in Box Canyon 28 Apr 2004 (JMMcM, LHW). Garrett and Dunn (1981) treated this species as an uncommon transient and winter visitor on the larger Channel Islands, and Small (1994) called it fairly common during winter on Santa Catalina Island, but it has not proven to be of regular occurrence on SCI. It is possible that many sapsuckers go undetected on SCI; in some of the island's heavily wooded canyons, such as Eagle Canyon, trees often show the characteristic drillings of sapsuckers (BLS pers. obs.).

Northern Flicker (*Colaptes auratus*).†* Uncommon migrant and fairly common winter visitor. The Red-shafted Flicker (*C. a. canescens* and/or *collaris*) is recorded primarily from 20 Sep to 12 Apr, exceptionally as late as 6 May (2001, one at Boulders South, BLS). The high count is of 30 on 18 Oct 2003 (JAM et al.). There are 13 records of the Yellow-shafted Flicker (*C. a. luteus*) 18 Oct–14 Jan, six of them during a remarkable flight of Northern Flickers during fall 2003.

Tyrannidae

Olive-sided Flycatcher (*Contopus cooperi*).* Rare spring migrant and very rare fall migrant. Recorded in spring from 24 Apr to 6 Jun; six fall records from 30 Aug to 14 Oct. First recorded 2 May 1974 (WC, RS), and only three records before 1984 (Jorgensen and Ferguson 1984). The high counts are of three in Wilson Cove Canyon 20 May 2001 (FB et al.) and four islandwide 10–12 Sep 1975 (PO).

Western Wood-Pewee (*Contopus sordidulus*).* Uncommon migrant. Recorded in spring primarily from 24 Apr to 14 Jun, exceptionally as early as 9 Apr (Jorgensen and Ferguson 1984), and in fall primarily from 22 Aug to 8 Oct, exceptionally as early as 15 Jul (Jorgensen and Ferguson 1984). One summer record of a pair occupying a heavily wooded area in Norton Canyon 1 Jul 2002 suggests possible breeding

(BLS, AMC). The high counts are of three in Eagle Canyon 15 Sep 1996 (MAB), in Wilson Cove Canyon 21 May 2001 (BLS et al.), and at the oaks near Stone Station 26 Apr 2004 (BLS, JMMcM).

Willow Flycatcher (*Empidonax traillii*).* Very rare migrant. Sixteen spring records primarily from 22 May to 14 Jun, exceptionally as late as 20 Jun (2002, one at Lemon Tank that arrived 10 Jun, BLS et al.); nine fall records from 1 Sep to 3 Oct. Jorgensen and Ferguson (1984) reported three spring sightings from 2 to 13 May, but these fall outside the spring interval evident in our data. Classified as a common transient on the Channel Islands by Garrett and Dunn (1981), this species has proven to be of rare occurrence on SCI.

Least Flycatcher (*Empidonax minimus*).# Accidental. One record: one seen and heard calling near Northwest Harbor 6 Oct 2002 (BLS). There are only five other records for the Channel Islands (Jones and Collins unpubl. data).

Hammond's Flycatcher (*Empidonax hammondii*).†* Rare spring and casual fall migrant. Recorded in spring from 9 Apr to 1 May. Four fall records of single birds: 11 Sep 1974 (HLJ), 12 Sep 1974 (HLJ), 1 Oct 1980 (EC et al.), and Lemon Tank 5 Oct 2000 (CWB). Difficult identification makes for few confirmed records, only nine prior to 2004. Laurence M. Huey collected one on 9 Apr 1915 (UCLA 427). During spring 2004, a remarkable fallout of *Empidonax* flycatchers occurred from 23 to 27 Apr, resulting in identification of 47 Hammond's Flycatchers. The peak count of 19 on 25 April 2004 (BLS et al. photo) is exceptional for the Channel Islands. An additional 154 unidentified *Empidonax* flycatchers, most of them likely Hammond's, were also seen during this time.

Gray Flycatcher (*Empidonax wrightii*).* Rare spring migrant with 22 records from 19 Apr to 12 May. Owing to its distinctive tail motion, the Gray Flycatcher is more readily identified during migration than the other species of *Empidonax*. First recorded 8 May 1974 (WC, RS). The high count is of four on 25 Apr 2004 (BLS), with nine from 23 to 27 Apr 2004 (BLS et al.).

Dusky Flycatcher (*Empidonax oberholseri*).* Very rare spring migrant with 17 records from 14 Apr to 4 June. Four fall reports from 6 Sep to 10 Oct lack documentation. During the remarkable fallout of *Empidonax* flycatchers on SCI 23–27 April 2004, an amazing 27 were identified, with a high count of 12 on 25 Apr 2004 (BLS et al.; Figure 31). The difficulty of distinguishing the Dusky Flycatcher from other migrant *Empidonax* flycatchers, particularly the more common Hammond's, and the Dusky's rarity along the southern California coast (Garrett and Dunn 1981), mean that it should be identified with great caution on SCI. There are only 21 records to date for the Channel Islands (Jones and Collins unpubl. data).

Pacific-slope Flycatcher (*Empidonax difficilis*).†* *Contributed by Robb S. A. Kaler.* Uncommon breeder and migrant. Recorded primarily from 1 Apr to 21 Oct, exceptionally as early as 17 Mar (2004, one singing in Horton Canyon, JMMcM). The breeding population is augmented by migrants during spring and fall. The high count is of 25 in Middle Ranch Canyon 13 Apr 2002 (BLS, AMC). The Pacific-slope Flycatcher also breeds on Santa Cruz, Santa Rosa, Anacapa, and Santa Catalina islands (Johnson 1972, Diamond and Jones 1980, Garrett and Dunn 1981, Small 1994).

Pacific-slope Flycatchers nest primarily in canyon bottoms and typically raise two broods each season. Nest are placed in a variety of situations: rock walls, banks, cavities or cracks of living or dead trees, forks of trees, or niches in large trunks (Howell 1917, Grinnell and Miller 1944). Our recent records of breeding behavior are of a pair building a nest in Norton Canyon 4 May 1997 (JAM), an adult feeding two fledglings in Cave Canyon 12 Jul 2003 (HAC), two pairs building nests on undercuts of rocky cliffs in Horse Canyon 2 May 2004 (BLS, SWS), and one pair on a nest in a lemonadeberry shrub overhanging a cliff face in Horse Canyon 2 May 2004 (BLS, SWS).

H. C. Oberholser (1897) described the Channel Islands flycatchers as the subspecies *E. d. insulicola* on the basis of their larger size, longer tail, and brighter breast, with the type specimen taken on Santa Rosa Island 3 Jul 1892 (USNM 140078). The validity of *insulicola* has been debated. The early literature described *insulicola* as differing from nominate *difficilis* of the mainland in being darker brown above, especially on the head, and paler below, especially anteriorly (Grinnell 1905, 1906, Howell 1917). Individual and seasonal variation and probably confusion of migrants with the locally breeding population caused many authors to question the subspecies and led to the A. O. U. committee's rejection of *insulicola* in 1908. Brodkorb (1949) resurrected the subspecies. Johnson (1980) studied the differences among the insular, coastal, and interior populations. The A. O. U. (1989), in splitting *E. difficilis* and *E. occidentalis*, noted that with additional research *insulicola* may merit species status. Johnson and Marten (1988) demonstrated its genetic differences and reduced gene flow with mainland populations. *Empidonax d. insulicola* is unique in being the only migratory endemic subspecies of bird on the Channel Islands.

Black Phoebe (*Sayornis nigricans*).†* Casual breeder; rare migrant and winter visitor. The Black Phoebe is recorded in all months but is most frequent from late summer through autumn, with peak numbers in October. It can be found in canyon bottoms and around man-made structures during fall and winter. The high count is of six in lower Bryce Canyon 8 Nov 1998 (TRM). The species was first recorded 12 Feb 1903 (Breninger 1904). The only nesting records are of an unfinished nest in a cave at an unspecified location on SCI 20 Mar 1907 (Linton 1908) and of one adult feeding two fledglings near an abandoned water tank at VC3 28 Jun 2002 (BLS, JTB photo). This species' scarcity as a nesting bird on SCI may be due to the lack of flowing or standing water in some years. Garrett and Dunn (1981) reported it as nesting commonly on most of the larger Channel Islands.

Say's Phoebe (*Sayornis saya*).†* Common migrant and winter visitor; casual in summer. Recorded primarily from 5 Sep to 11 Apr, exceptionally as early as 10 Aug (2004, one juvenile at Wilson Cove, BLS). One summer record: one at Wilson Cove 16 June 2004 (SWS et al.). The high count is of 25 in the shore bomardment area (SHOBA) covering the southern third of SCI 2 Oct 2001 (BLS, AMC). This species is most common during fall migration, with numbers peaking in September and early October. Numbers decrease during late fall and early winter, but many individuals overwinter.

Vermilion Flycatcher (*Pyrocephalus rubinus*).* Casual fall migrant. One record: a female at Horse Beach 29–30 Sep 2003 (RSAK, BLS; Figure 32). One was on San Nicolas Island 29 Sep 1974 (Garrett and Dunn 1981), one of only three other records for the Channel Islands (Jones and Collins unpubl. data).

Ash-throated Flycatcher (*Myiarchus cinerascens*).* Rare migrant. Recorded in spring primarily from 1 Apr to 4 Jun, exceptionally as late as 16 Jun (2001, two in Horse Beach Canyon, CWB); in fall primarily from 17 Jul to 11 Sep, exceptionally as early as 9 July (2004, one at VC3, WMF, CML) and as late as 15 Oct (2001, one juvenile at Lemon Tank, BLS photo). This species is usually found singly; the high count is of two in Horse Beach Canyon 16 Jun 2001 (CWB) and in Wilson Cove Canyon 19 May 2002 (BLS). It can be found in canyon bottoms as well as on *Baccharis*-covered terraces. There are 10 records of *Myiarchus* flycatchers from 15 Sep to 26 Nov identified as the Ash-throated but possibly representing vagrant species of *Myiarchus*. A *Myiarchus* on 3 Jan 1980 was thought to be an Ash-throated (PDJ).

Tropical Kingbird (*Tyrannus melancholicus*).# Casual in fall. One record: one on 13 Oct 1976 (HLJ). There is only one other record for the Channel Islands, also in October (Jones and Collins unpubl. data).

Cassin's Kingbird (*Tyrannus vociferans*).†* Rare migrant; casual winter visitor. Recorded in spring from 28 Mar to 13 May, in fall from 26 Jun to 3 Nov. Less frequent than the Western Kingbird during both spring and fall migration. In contrast to its status in coastal mainland southern California, Cassin's Kingbird rarely overwinters on SCI, where there are only two winter records: one on 1 Jan 1999 (TRM); one in Cave Canyon 26 Feb 1995 (CEK). The high count is of two on four dates. The species was first recorded 5 Apr 1907 (Linton 1908).

Western Kingbird (*Tyrannus verticalis*).* Uncommon migrant; casual in summer. Recorded in spring primarily from 20 Mar to 16 May, exceptionally as early as 10 Mar (1997, one at Stone Station, JHG, SL) and as late as 29 May (2001, one at Boulders South, BLS), in fall primarily from 16 Jul to 11 Oct, exceptionally as early as 4 Jul (2003, one in Mosquito Cove, BLS) and as late as 19 Oct (2001, one at Oly Locker, JHP, ZJN). Three June records: one at Thirst 14 Jun 2003 (BLS), one in SHOBA 18 Jun 2001 (CWB), and one at Stone Station 26 June 2003 (BLS). This species is the most frequent kingbird during both spring and fall migration; it is markedly more frequent in spring than in fall. During fallouts it often lines the wires near the high points of the island (e.g., Thirst, and Stone Station). The high count is of 50 islandwide 14 Apr 1999. A stationary count of 46 was made from Stone Station during a flight of spring migrants 26 Apr 2004 (BLS, JMMcM).

Eastern Kingbird (*Tyrannus tyrannus*).* Casual migrant. Four spring records of single birds: 13 May 1979 (PDJ), 24–26 May 1980 (JLa), at West Shore 5–7 Jun 2003 (IR, NMM), and Horse Beach 7 Jun 2003 (BLS, RSAK). Four fall records of single birds: 22 Sep 1976 (HLJ), Lemon Tank 27 Jul 2001 (BLS et al.), Northwest Harbor 20–21 Jul 2002 (JTB, BLS photo), and Lemon Tank 2 Sep 2002 (BLS photo, JHP). This species has been recorded on all the Channel Islands, with nearly half of the occurrences in June and early July (Jones and Collins unpubl. data).

Scissor-tailed Flycatcher (*Tyrannus forficatus*).# Casual migrant. Three records of single birds: 2 Jun 1986 (Langham 1991), Larkspur Canyon 29 Apr 1997 (JAM, JHG; Rottenborn and Morlan 2000), and 29 May 1999 (CE), reportedly chased by a Loggerhead Shrike. There are 16 Channel Island records to date from 29 April to late July or early August (Jones and Collins unpubl. data).

Laniidae

Loggerhead Shrike (*Lanius ludovicianus*).†* *Contributed by Suellen Lynn and Jonathan H. Plissner.* Rare breeder and resident. San Clemente Island's endemic subspecies of the Loggerhead Shrike, *L. l. mearnsi*, has a unique combination of features: upperparts darker than in other subspecies, except *anthonyi* of the other Channel Islands, but pale underparts (including flanks), white rump and scapulars, and short bill, wings, and tail (Ridgway 1903, Miller 1931; Figures 33, 34). In *anthonyi* the underparts, flanks and rump are all dark in comparison to *gambeli* of the nearby mainland. In his revision of the shrike, Miller (1931) considered *mearnsi* the most distinctive of all its subspecies. Mundy et al. (1997a, b) found a certain mitochondrial DNA haplotype (designated A) to predominate more in San Clemente Loggerhead Shrikes than in three other shrike subspecies. They also found significantly lower genetic variation in the San Clemente shrike than in mainland subspecies. Genetic data suggest that the SCI population was founded within the last 350 years (Mundy et al. 1997b, Eggert and Woodruff 1999, Eggert et al. 2004). On the basis of plumage characteristics Patten and Campbell (2000) suggested that the current population is closer to *anthonyi*, although this conclusion was based on only four specimens collected in the early 1990s (the only four recent adults whose plumage was preserved). Eggert et al. (2004) confirmed that the shrike population in the late 1990s had a unique frequency of mitochondrial DNA haplotypes, although there was doubtless

some intergradation from neighboring shrike populations. Johnson (1972) also suggested that the subspecies *mearnsi* originated from immigrants from the other islands rather than directly from the mainland.

In the late 1800s and early 1900s Mearns (1898) and Linton (1908) described the Loggerhead Shrike as fairly common and widely distributed on SCI. No estimates of the population were made prior to the 1980s, but numbers were as low as "a few individuals" in the early 1970s (P. D. Jorgensen pers. comm.), and in 1977 *L. l. mearnsi* was formally listed as endangered under the U.S. Endangered Species Act. Scott and Morrison (1990) initiated intensive research in the mid-1980s and from partial surveys of the island estimated the population to be between 17 and 30 individuals. The population reached a low of 14 adults in 1998 (Juola et al. 1997a, b, Mader and Warnock 1999, Mader et al. 2000). Besides the damage to the nesting habitat by the goats, predation by introduced cats and rodents may have contributed to the shrike's decline (Scott 1987), and predation of fledglings has hindered recovery (Scott and Morrison 1990).

Following the island's denudation, nesting habitat for the shrike remained only in the canyons of the southern third of SCI, mainly in the form of the large Catalina cherry trees that survived through the years of heavy grazing. Upper China Canyon was the core of the breeding distribution through the period when the population remained critically low, although pairs also appeared irregularly in Twin Dams, Boulders South, Vista, and Bryce canyons of the steep eastern escarpment.

Intensive management of the shrike on SCI began in 1992 with birds raised in captivity. From 1992 to 1996, eggs were gathered from nests on the island, incubated at the San Diego Zoo, and the chicks were reared in captivity. Forty of these young were released on the island, but none of them survived beyond eight months. From 1999 through 2004, 207 captive-bred juveniles and adults were released according to "soft release" techniques developed by the Institute for Wildlife Studies, and 43 of these (21%) were still alive at the end of 2004. As a part of this program, all released shrikes and many descendants of released shrikes receive a supplemental diet of insects and mice. All wild and released shrikes are banded with a unique combination of three color bands and one Fish and Wildlife Service aluminum identification band; they are monitored year-round by PRBO Conservation Science.

Recent releases of captive-reared individuals have focused on canyons north of SHOBA and have resulted in establishment of breeding pairs in Horse, Box, Norton, and Middle Ranch canyons. As the island's vegetation has recovered, shrikes have also nested commonly in shrubs such as lemonadeberry, sagebrush, and coyote brush (*Baccharis pilularis*). Since 2001, a few pairs have established nesting territories in the recovering grassland and scrub of the upper plateaus, and it seems likely that this trend will continue.

During the breeding season from February through July, the shrike's distribution centers around its nests, though some nonbreeders wander widely. Currently, both wild and captive-reared released shrikes nest primarily in west-draining canyons and in the lower half of the eastern escarpment of the southern two-thirds of SCI, areas of most native trees and shrubs (Blackford et al. 2003).

During the winter, males and females typically occupy separate territories, and then begin pairing in January (exceptionally as early as 13 Nov). Pairs form or reestablish themselves in breeding territories when winter territorial aggression subsides and females begin to beg toward and are fed by males. The earliest recorded date of nest-building is 21 Jan. Males and females both build, and the first nest attempts are well underway by the end of March. The shrikes build cup nests between 0.4 and 9.3 m above the ground in trees and shrubs with relatively dense foliage. Females lay one to six eggs per nest and are the primary incubators. They begin incubating before laying the last egg of the clutch and remain on the nest for approximately two weeks, seldom leaving it even to feed, as males continue to deliver food to their incubating

mates. Both parents provide food to nestlings, which fledge approximately 17 days after hatching. The percentage of nests fledging young each year varies between 12.5 and 61%. Reproductive success correlates weakly with the preceding winter's rainfall. Nests fail because of depredation (primarily by black rats) and abandonment during inclement weather.

Parental provisioning of young continues after fledging and may last several weeks, although juveniles are capable of foraging independently by the time they are 40 days old. Pairs may renest following successful or unsuccessful rearing of their first broods. The latest recorded fledging date is 25 Jul, for the second brood of a pair that nested in 2001. In 2002, home ranges during the breeding season averaged 26 ha (range 1.3–271.1 ha).

During the nonbreeding season, August–January, shrikes are more widely distributed across island habitats as pairs separate, young disperse, and foraging areas increase in size. Individuals often forage on the island's plateaus, around buildings, and along both the eastern and western shorelines. Since 1999, some individuals have established wintering home ranges at Lemon Tank, VC3, and Wilson Cove, although these typically were juveniles released from captivity. Established males typically remain near their breeding territories, although they often forage over a greater area. Females sometimes remain on their breeding territories as well, although when not encouraged to stay at their breeding site by the provisioning of supplemental food, both members of a pair do not share a nonbreeding territory. The overwintering locations of many individuals, particularly adult females, remain a mystery to researchers who have been monitoring the population intensively since the 1980s.

Only two shrikes banded on SCI have been recovered elsewhere. Remains of one were found at a Peregrine Falcon aerie at a Least Tern (*Sterna antillarum*) nesting colony near Coronado, California, in 1994 (Everett et al. 1996); as Peregrine Falcons

Figure 34. Adult male Loggerhead Shrike at China Canyon showing plumage features typical of *Lanius ludovicianus mearnsi*, March 2003.

Photo by Brian L. Sullivan

are known to transport prey items long distances, possibly the falcon carried the shrike from the island to the mainland. On 14 July 2002 a captive-reared juvenile died shortly after appearing at Middle Ranch on Santa Catalina Island, 12 days after its release on SCI.

In 1997 a comprehensive predator-management program was adopted to enhance the shrikes' survival. Nonnative predators (feral cats and black rats) are removed via trapping and spot-lighting (Cooper et al. 2002, 2003, Kershner and Cooper 2004). Native predators such as the Island Fox, Common Raven, Red-tailed Hawk, and American Kestrel have also been controlled. Other efforts to aid the shrike include habitat restoration, spearheaded by the Soil Ecology and Recovery Group (SERG) from San Diego State University. Habitat restoration by SERG, guided by results from research conducted by the Institute for Wildlife Studies, has involved installing temporary supplemental hunting perches for the shrikes, removing nonnative ground cover, propagating native plants, and planting native trees and shrubs throughout SCI.

While controversial at times, the navy's shrike-recovery program has demonstrated some modest success with a population that had dwindled to fewer than five breeding pairs as recently as 1991. In 2004 the breeding population was approximately 41 pairs (Lynn et al. 2005). An estimate of the island's carrying capacity (and thus a reasonable recovery goal) is difficult to make because of the paucity of data on the distributions of habitats and shrikes prior to grazing and other human effects on SCI. If the population continues to recover, the population bottleneck will likely be reflected in lowered genetic diversity and possibly in the effects of inbreeding. Reintroduction of captive-reared birds may also have long-term effects, as these birds develop, persist, and breed in an environment requiring greater tolerance of both neighboring shrikes and people. Historically, San Clemente shrikes were described as notably wary of human observers, but the recent release of captive-reared individuals has resulted in significant numbers of birds that are indifferent or even attracted to human activity.

Migratory Loggerhead Shrikes (likely *L. l. gambeli*) have been recorded rarely on SCI, typically one to three per spring and fall. Presumed migrants typically appear in March or early April and late September or October, but the interval is clouded by confusion with immature residents. The paler plumage of *gambeli* facilitates the migrants' identification. Furthermore, PRBO Conservation Science bands all Loggerhead Shrikes on SCI, and banded birds that are apparently *gambeli* disappear from the island by mid-March.

Vireonidae

Bell's Vireo (*Vireo bellii*). Accidental. Two records of apparent Least Bell's Vireos (*V. b. pusillus*): one at Lemon Tank 7 Oct 2001 (BLS); one at Wilson Cove 2 Oct 2004 (JMMcM, BLS). Although this subspecies breeds primarily in coastal southern California, it is rarely recorded during migration (Garrett and Dunn 1981, G. McCaskie pers. comm.), so it should be identified with caution on the Channel Islands. Elsewhere on the Channel Islands, Jones and Collins (unpubl. data) consider only one other report to be adequately documented.

Yellow-throated Vireo (*Vireo flavifrons*).# Casual spring migrant. One record: a single bird in the oak grove in upper Burns Canyon 27 May 2003 (DJH; San Miguel and McGrath 2005). There is but one other Channel Islands record, of a single bird on Santa Catalina Island 27 Oct 1974 (Small 1994).

Cassin's Vireo (*Vireo cassinii*).* Rare spring and very rare fall migrant. Recorded in spring from 30 Mar to 12 May and in fall from 5 Sep to 14 Oct. It is more frequent during spring migration, and most records are from late April. Most birds occur in the oak groves on the east side. The high count is of 14 on 25 Apr 2004 (BLS et al.).

Hutton's Vireo (*Vireo huttoni*).#* Casual visitor. Two records: one singing in an oak grove near Stone Station 16 Mar–2 Apr 2002 (JHP, CRK); one singing in Cancha-

lagua Canyon 12–13 Jun 2004 (BLS et al.; Figure 35). Although this species breeds on Santa Rosa, Santa Cruz, and Santa Catalina islands (Garrett and Dunn 1981), it is largely sedentary, occurring only as a vagrant on SCI. It has also been recorded as a vagrant on San Miguel and San Nicolas islands (Jones and Collins unpubl. data).

Warbling Vireo (*Vireo gilvus*).†* Fairly common migrant. Recorded in spring primarily from 4 Apr to 30 May, exceptionally as early as 20 Mar (2002, one at Stone Station, JHP), and in fall primarily from 21 Aug to 15 Oct, exceptionally as early as 10 Aug (1996, east shore, PAA, BJR). In spring the high counts are of 378 on 25 Apr 2004 (BLS et al.) and 323 on 26 Apr 2004 (BLS et al.), during the spectacular fallout of spring 2004. The fall high count is of 18 on 21 Sep 2004 (BLS, JMMcM). This species is one of the most common migrant passerines on the island, found in about equal abundance during spring and fall. It was first recorded 19 May 1914 (H. H. Kimball).

Philadelphia Vireo (*Vireo philadelphicus*).# Casual fall migrant. Two records, both of single birds at Lemon Tank: 4 Oct 2001 (BLS et al.) and 3 Oct 2002 (BLS). Both birds were in bright plumage, likely immatures. Garrett and Dunn (1981) listed two other records for the Channel Islands.

Red-eyed Vireo (*Vireo olivaceus*).#* Casual fall migrant. Two records, both of single birds: Lemon Tank 17 Oct 2001 (BLS et al.); along the road to Stone Station 14 Oct 2003 (BLS photo, RSAK). Garrett and Dunn (1981) considered this species a casual vagrant to the Channel Islands.

Yellow-green Vireo (*Vireo flavoviridis*).†* Casual fall migrant. One record: a bird in fresh plumage at Lemon Tank 18 Sep 2002 (BLS et al., Figure 36; Cole and McCaskie 2004).

Figure 35. Hutton's Vireo in Canchalagua Canyon 13 June 2004.

Photo by Brian L. Sullivan

Corvidae

Common Raven (*Corvus corax*).†* Common breeder and resident. This species nests along sea cliffs and canyons, typically in pothole caves but also occasionally on ledges. At present, fewer than 20 pairs are known to breed on the island (Cooper et al. 2002, 2003), but throughout the 1970s numbers were considerably higher with frequent counts of nearly 200 birds together near China Point (P. D. Jorgensen pers. comm.). In 2001, Cooper et al. (2002) identified 18 raven territories, 16 of which had confirmed nests, and in 2002, Cooper et al. (2003) identified 12 raven territories, 11 of which had confirmed nests. During road surveys in 2001 and 2002, Cooper et al. (2003) reported 0.40 and 0.62 ravens per kilometer, respectively; during hiking transects in 2001 and 2002, they reported 1.10 and 1.41 ravens per kilometer, respectively. From these they estimated a population of 80–132 individuals. These standardized surveys yielded high counts of 84 on 6 Mar 2002, 68 on 12 Feb 2002, and 63 on 9 Apr 2002 (BLS, AMC).

Nesting typically occurs from mid-March through mid-June (Cooper et al. 2003). The clutch size is typically one to four but occasionally as large as six. The mean number of fledglings per nest in 2001 and 2002 was 2.4 and 2.2, respectively (Cooper et al. 2002, 2003). Large "bachelor" flocks, often of 30–50 individuals, wander the island year round and consist largely of two-year-old birds. The high count is of 193 on 8 Sep 1976 (HLJ), along 4 km of road. A more recent high count is of 46 near Box Canyon 26 Oct 2004 (JMMcM, LHW). The raven was first recorded on SCI by a naturalist (A. W. Anthony) 23 Aug 1894, although prehistoric remains have been found in early hunter–gatherer middens, confirming this species' presence on the island as long as 3500 years ago (Porcasi 1999a).

Alaudidae

Horned Lark (*Eremophila alpestris*).†* *Contributed by Robb S. A. Kaler.* Common breeder and resident. An endemic subspecies of the Horned Lark, *E. a. insularis*, is resident on all the Channel Islands except Anacapa, where it has bred and occasionally winters (Garrett and Dunn 1981, Small 1994). The original description by Townsend (1890) was of an adult male taken on SCI on 25 Jan 1889 (USNM 117674). This race differs from *E. a. actia* of the nearby mainland by its darker upperparts and heavily streaked breast (Dwight 1890, Oberholser 1902).

Breeding typically begins in late February and ends in late July, with at least two (possibly more) clutches reared each year. Nests described by early visitors were at the edge of iceplant (*Carpobrotus* sp., *Mesembryanthemum* sp.), below cactus, or concealed in the lee of a bunch of grass (Grinnell 1897a, Howell 1917, Bent 1942).

Early visitors to the island described the lark as abundant on the island's open uplands (Breninger 1904, Linton 1908, Howell 1917). This habitat type was perpetuated by introduced grazers for most of the 1900s. Horned Lark populations have probably declined since the removal of goats and sheep but continue to thrive in the open, exposed portions of the island. *Eremophila a. insularis* has occurred on the adjacent mainland in winter, but it is unclear whether individuals remain to breed there (Grinnell and Miller 1944, Johnson 1972). The status of migrant races on SCI is uncertain (Jorgensen and Ferguson 1984), although occasional individuals appear to be of a paler subspecies, suggesting some influx of migrants (BLS pers. obs.).

Hirundinidae

Purple Martin (*Progne subis*).* Casual migrant. Three records: two immature birds foraging at Lemon Tank 15 Sep 2002 (BLS, JMMcM videotape), two adult males in lower Burns Canyon 1 May 2004 (SH), and one immature or female at Lemon Tank

photographed 24 Aug 2004 (JMMcM). The spring record falls within the interval expected for spring migrants along the mainland coast and the Channel Islands (Garrett and Dunn 1981). This species is rare as a fall migrant in coastal southern California (Garrett and Dunn 1981), so the two SCI records are quite unusual. There are only 8–10 reports for the Channel Islands, all but the two in fall for SCI from spring (Jones and Collins unpubl. data).

Tree Swallow (*Tachycineta bicolor*).* Rare spring and fall migrant; casual in summer. Recorded in spring primarily from 28 Feb to 14 Apr, exceptionally as early as 5 Feb (1997, two at Lemon Tank, WTE, MAB), and in fall from 20 Aug to 8 Nov. One summer record: one near West Shore 29 Jun 2004 (IR). First recorded 30 Aug 1978 (PDJ); only three records as of 1983 (Jorgensen and Ferguson 1984). The Tree Swallow is usually found in small flocks, and the high counts are of 40 foraging over Oly Locker during a storm on 4 Apr 2001 (BLS) and 35 on 26 Sep 1978 (PDJ).

Violet-green Swallow (*Tachycineta thalassina*). Very rare spring migrant; casual at other times of the year. Recorded in spring primarily from 25 Feb to 14 Apr, exceptionally as early as early as 10 Feb (1996, one along the road near Middle Ranch Canyon, BJR) and as late as 15 May (2004, one in Norton Canyon, BLS, WMF). One summer record: one at Wilson Cove 29 June 2000 (JTB). Four fall records: one at Lemon Tank 17 Nov 1992 (WTE), two in China Canyon 27 Oct 1998 (TRM), one near Wilson Cove 21 Oct 2000 (CWB), and one at Lemon Tank 12 Nov 2004 (JMMcM). One winter record: one at Wilson Cove 11 Dec 2004 (JMMcM, SRH). The high count is of five over Vista Overlook 2 Apr 2002 (BLS, AMC). Garrett and Dunn (1981) suggested that during the spring this species rarely migrates over the Channel Islands, and our data generally corroborate this hypothesis.

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*). Very rare migrant. Recorded in spring primarily from 24 Mar to 1 May, exceptionally as early as 9 Mar (2004, one at VC3, JMMcM, JLK), in fall from 10 Jul to 8 Oct. As of 1983, there was only one record for SCI (Jorgensen and Ferguson 1984), though Garrett and Dunn (1981) considered the species a rare transient on the Channel Islands. The high counts are of two near Chamish Canyon 24 Mar 2001 (BLS) and two at China Point 10 Aug 2003 (RSAK).

Bank Swallow (*Riparia riparia*). Casual migrant. Four records of single birds: 2 May 1974 (WC, RS), at SHOBA Pond 21 Oct 1995 (RTP, PAA), over Pyramid Point 18 May 2002 (BLS), and in China Canyon 28 May 2004 (CML). The Bank Swallow's rarity on SCI is in line with its current rarity along the mainland southern California's coast.

Cliff Swallow (*Petrochelidon pyrrhonota*).* Rare migrant and summer visitor. Recorded from 9 Apr to 2 Oct. First recorded 10 Jun 1973 (HLJ), and only two records as of 1983 (Jorgensen and Ferguson 1984), but more frequent than other migrant swallows on SCI. In spite of the occasional occurrence through the summer, breeding has not been documented. The high count is of 10 on 25 Sep 1978 (PDJ).

Barn Swallow (*Hirundo rustica*).* Fairly common breeder and migrant. Recorded from 20 Feb to 15 Oct, exceptionally as late as 31 Oct (2001, one at Lemon Tank, BLS) and 15 Nov (Jorgensen and Ferguson 1984). Jones and Diamond (1976) suggested that this species colonized SCI after 1968; the first recorded nest was an unattended one found in 1974 (HLJ). The Barn Swallow was first recorded on SCI in 1915. Barn Swallows currently nest in a variety of man-made structures islandwide and on sea cliffs. The high count is of 30 nesting in an abandoned water tank at VC3 28 June 2002 (BLS, AMC). The species is now abundant enough on SCI that it is often ignored in daily records, so the high count underrepresents what is often seen in a typical summer day.

Sittidae

Red-breasted Nuthatch (*Sitta canadensis*).* Very rare fall migrant; casual in spring. Irruptive; absent most years. Recorded in fall from 7 Sep to 10 Nov. There are two spring records: one 31 May 1980 (JLa); one in Larkspur Canyon 6 May 1997 (JHG). Invasion years on record are 1996 (26 individuals), 1998 (7 individuals), and 2004 (18 individuals). The high count is of eight in Cave Canyon 14 Oct 1996 (FAJ). First recorded 22 Sep 1975 (HLJ). This species breeds occasionally on Santa Cruz Island (Garrett and Dunn 1981), where it is not recorded in every year and may be absent for extended periods.

Troglodytidae

Rock Wren (*Salpinctes obsoletus*).†* Common breeder and resident; migratory status uncertain. The Rock Wren is found in rocky canyons and around man-made structures islandwide, but despite its being one of the most common breeding birds on SCI it is poorly known. Possibly its numbers have increased since the early 1900s, when it was reported by various authors as "fairly common." An albino was in Chenetti Canyon 6 July 1996 (BJR).

Grinnell (1898) described the Rock Wrens of San Nicolas Island as *S. o. pulverius* on the basis of their reportedly larger bill and feet and paler, buffier coloration in comparison to nominate *obsoletus* of the mainland. Four years later, without further comment, he included SCI in the range of *pulverius* (Grinnell 1902). Swarth (1914), however, found the only difference to be the bill, averaging slightly longer in *pulverius*, and he recommended that the name *pulverius* be restricted to the Rock Wrens of San Nicolas Island only. Willett (1912) and Dawson (1923) questioned its validity, and finally Grinnell himself (1927) renounced *pulverius*, acknowledging that the supposed color difference resulted from discoloration by dust and that the extent of overlap in bill length was too much for the subspecies to be recognized. *S. o. pulverius* lay forgotten until Phillips (1986) tentatively resurrected it on the basis of a possibly browner back and wider and heavier bill. He included SCI as well as San Nicolas Island in its range. A quantitative analysis of these possible differences remains to be done.

Bewick's Wren (*Thryomanes bewickii*).† *Contributed by Robb S. A. Kaler.* Extinct breeder; accidental migrant. The San Clemente Bewick's Wren (*T. b. leucophrys*) is now extinct, most likely because of habitat destruction by fire and introduced grazers. A. W. Anthony (1895) described the subspecies, designating as the type specimen a male collected 27 Aug 1894. The San Clemente insular race differed from the mainland race *charienturus* by its paler, grayer upperparts, shorter tail, and thicker bill (Swarth 1916, Phillips 1986).

Early visitors (Grinnell 1897a, Linton 1908, Howell 1917) described this former resident as "very common" to "abundant." Despite a search by Martin Cody in 1968 (unpubl. notes), no records exist since George Willett collected a male in Middle Ranch Canyon 17 Feb 1941 (Jorgensen and Ferguson 1984). This wren probably met its requirements for subsistence in the brush- and cactus-covered hillsides, those for nesting by cavities and crevices in canyon walls (Breninger 1904, Howell 1917). Additional nesting sites were suspected in the center of dense cactus patches (Anthony 1895, Breninger 1904).

There are three observations of presumed migrant Bewick's Wrens on SCI since the extinction of *leucophrys*: a singing male in Horse Canyon 15 Apr 1973 (HLJ) was subsequently captured 4 May 1973 and photographed by Stewart et al. (1974). One was in lower Bryce Canyon 11 Oct 1996 (BJR), and one was in Cave Canyon 24–25 Sep 1999 (JAM, SL).

House Wren (*Troglodytes aedon*).† Rare migrant and winter visitor; casual in summer. Recorded primarily from 7 Aug to 25 Mar. Decidedly more numerous during fall,

with the majority of records coming from September through November. The high count is of 15 in Box Canyon 21 Sep 1996 (BJR, FAJ). Three summer records: 15 Jul 1972 (PDJ; first record for SCI), one in Horse Canyon 8 July 2004 (SWS, WMF), and one singing in Cave Canyon 8 Jul–14 Aug 2004 (SWS et al.). The last raised the possibility of breeding, although there was no further evidence of this.

Marsh Wren (*Cistothorus palustris*).†* Very rare migrant; casual winter visitor. Eleven fall records from 23 Sep to 16 Dec. One winter record: three (high count) at Horse Beach 11 Jan 2004 (BLS et al. photo). A specimen collected 13 Nov 1939 (G. Willett; LACNHM 19635) is *C. p. clarkae* and the only specimen of this subspecies collected away from its breeding range in coastal mainland southern California (Unitt et al. 1996). The marshy areas around Chenetti and Horse beaches most suitable for the species are currently inaccessible to biologists.

Regulidae

Golden-crowned Kinglet (*Regulus satrapa*). Casual migrant. Recorded in fall primarily from 13 Oct to 12 Nov, exceptionally as early as 11 Sep (1980, EC, HLF). One spring record: one in Middle Ranch Canyon 16 Mar 2001 (CWB). First recorded 2 Nov 1975 (HLJ). Occurs sporadically; the year 2000 accounts for four of the eight island records and the high count of 12 in Eagle Canyon 12 Nov 2000 (CWB). Although Garrett and Dunn (1981) considered the Golden-crowned Kinglet an uncommon transient on the Channel Islands, our data suggest it may be of more limited occurrence on the southern islands.

Ruby-crowned Kinglet (*Regulus calendula*).* Fairly common migrant; rare winter visitor. Recorded from 21 Sep to 9 May, most frequently in October. The high fall count is of 18 in China Canyon 10 Nov 1996 (MTP); the high spring count is of 15 in Middle Ranch Canyon 13 Apr 2002 (BLS, AMC). First recorded 14 Apr 1973 (HLJ), the Ruby-crowned Kinglet is one of the most numerous migrant passerines on SCI, typically found in mixed flocks with other passerines.

Sylviidae

Blue-gray Gnatcatcher (*Polioptila caerulea*).* Uncommon migrant and winter visitor. Recorded primarily from 21 Aug to 14 Apr, exceptionally as late as 29 Apr (2004, two in Horton Canyon, BLS, WMF). Most frequent during fall migration from September to November; the high count is of four in Horse Canyon 5 Oct 1995 (CLC, MKS). Just three records as of 1983 (Jorgensen and Ferguson 1984). This species breeds on Santa Cruz Island (Garrett and Dunn 1981).

Turdidae

Stonechat (*Saxicola torquatus*).*# Accidental. One record, the first for California of this Old World species: one photographed at the Chad's Bluff ponds 20–21 Oct 1995 (RTP; San Miguel and McGrath 2005; Figure 37). The Stonechat has been reported in North America just nine times (Sullivan and Patton unpubl. data), only one of them outside of Alaska: one photographed at Grand Manan I., New Brunswick, 1 Oct 1983 (Wilson 1986).

Mountain Bluebird (*Sialia currucoides*).†* Rare migrant and winter visitor. Recorded primarily from 18 Oct to 17 Mar, exceptionally as late as 30 Mar (2001, two at SHOBA gate, BLS, JTB) and 6 Apr (1996, one male at Horse Beach Canyon, BJR). Irregular and rather irruptive, recorded most frequently during fall migration from mid-October to late November. In some years, large foraging flocks form and remain through the winter. The high count is of 76 on 28 Dec 2004 (JMMcM), and 30–50 have been recorded on several dates. No spring migration of this species is known from SCI.

Townsend's Solitaire (*Myadestes townsendi*).* Very rare migrant; casual in winter. Recorded 11 times in fall from 23 Sep to 19 Nov and seven times in spring from 2 May to 30 May, exceptionally as early as 18 Apr (1997, one in China Canyon, JAM) and as late as 10 Jun (2002, one at Lemon Tank, BLS, AMC) and 12 Jun (1994, one at the old nursery, WTE). Three winter records: one in Norton Canyon 2 Dec 2000 (HAC), one at VC3 15 Dec 1996 (MH), and one at Lemon Tank 26 Jan 2002 (BLS photo); the bird did not remain through the winter. First recorded 2 May 1974 (WC, RS).

Swainson's Thrush (*Catharus ustulatus*).†* Uncommon spring migrant; fairly common fall migrant. Recorded in spring from 25 Apr to 10 Jun, in fall primarily from 1 Sep to 14 Oct, exceptionally as late as 21 Oct (2004, three at VC3 and Lemon Tank, JMMcM). More commonly heard than seen, particularly during fall migration from mid-September to mid-October, when the pre-dawn hours can be filled with the sounds of this species flying overhead. The birds are found in numbers by day in canyon bottoms, typically resting in the crowns of large Catalina cherry trees. The high count is of 40 in Cave Canyon 29 Sep 2003 (BLS, RSAK), though numbers certainly in the hundreds regularly pass overhead before dawn. Evidently large numbers of the species cross SCI, migrating over the ocean on their way south, possibly leaving Point Conception and angling southeast toward Mexico.

Hermit Thrush (*Catharus guttatus*).†* Uncommon migrant and winter visitor. Recorded from 21 Sep to 27 Apr, exceptionally as late as 15 May (Jorgensen and Ferguson 1984). The high fall count is of 18 at Horse Canyon 9 Oct 1996 (JAM); the high spring count is of 15 at Vista Overlook 13 Apr 2002 (BLS, AMC).

American Robin (*Turdus migratorius*).* Uncommon migrant and winter visitor. Recorded primarily from 8 Oct to 16 May, exceptionally as early as 27 Aug (2002, one at Lemon Tank, BLS, AMC), 10 Sep (2004, one at Northwest Harbor, HAC), and 25 Sep (1997, two at Wilson Cove, WTE) and as late as 7 Jun (2002, one at Wilson Cove, AMC). Usually seen in groups of up to five, but the high count is of 50 at Twin Dams 15 Dec 1998 (JAM, KW). The robin is suspected to have bred once on Santa Cruz Island. Its movements and occurrence in southern California are somewhat erratic (Garrett and Dunn 1981).

Varied Thrush (*Ixoreus naevius*).†* Rare fall migrant; casual in winter and spring. Recorded in fall primarily from 8 Oct to 21 Nov, exceptionally as late as 13–16 Dec (2001, one male at Wilson Cove, JTB photo). Two winter records: one male 25 Jan 1907 (C.B. Linton; MCZ 57621); one in Cave Canyon 2 Jan 1999 (SL). Three spring records: two collected 5 Apr 1907 (Linton 1908; FMNH 145634, MCZ 316651), one in Burns Canyon 16 May 2001 (JHP), and one male at Lemon Tank 18 May 2003 (IR).

Mimidae

Gray Catbird (*Dumetella carolinensis*). Casual fall migrant. Two records: one in Horse Canyon 9 Oct 1996 (JAM); one in Warren Canyon 4 Nov 2000 (CLC). There are only 10 records for the Channel Islands; six in fall, one in winter, and three in spring (Jones and Collins unpubl. data).

Northern Mockingbird (*Mimus polyglottos*).†* Fairly common breeding resident. Breeds throughout the island, mainly in large prickly pear patches. Young fledge from mid-April to mid-July. More common in the southern half of SCI, the mockingbird does not appear to be very dense in any one location. The Northern Mockingbird is one of the few passerines to compete directly with the San Clemente Loggerhead Shrike, and aggressive interactions between the two are common. There is no evidence of outside migration to the island; the species is thought to be sedentary.

Sage Thrasher (*Oreoscoptes montanus*).* Uncommon fall migrant; rare winter visitor; rare spring migrant. Recorded primarily from 22 Aug to 31 Mar, exceptionally as early as 11 Aug (2004, one at Lemon Tank, JMMcM) and as late as 13 Apr (2003, one at West Shore, CWB), 30 Apr (1996, one in Horse Beach Canyon, PAA), and 3 May (1974, one, WC, RS). During fall migration, several can be found daily with little effort from September through November (Figure 38). In some years the Sage Thrasher is fairly common during fall migration, in sharp contrast to its rarity along the coast of the nearby mainland. It was first recorded 9 Sep 1972 (JLe, JLa). Recent fall counts, with numbers of individuals counted or estimated in parentheses: 1995 (15), 1996 (7), 1997 (11), 1998 (12), 1999 (0), 2000 (11), 2001 (33–51), 2002 (11–14), 2003 (15), 2004 (37–74). This species is found islandwide during migration but seems to settle onto flat terraces, typically with many *Baccharis* shrubs. The high count is of eight at Lemon Tank and three at VC3 on 7 Oct 2004 (BLS et al.). The Sage Thrasher's abundance on SCI is one of the most interesting divergences between the island and mainland coast in the status of any migratory bird.

Brown Thrasher (*Toxostoma rufum*).† Accidental. One specimen found road-killed near the old nursery 14 Jul 1996 (DB-S; LACNHM 103415); identification verified by K. L. Garrett. This species is a vagrant to southern California primarily from September through May (Garrett and Dunn 1981), so SCI's single record from mid-July is quite unusual. There are only four other records for the Channel Islands (Jones and Collins unpubl. data).

Bendire's Thrasher (*Toxostoma bendirei*). Casual migrant. Two records: one 15 Sep 1979 (HLF); one 17 Aug 1980 (PDJ). Garrett and Dunn (1981) treated this species as a rare but regular fall vagrant on the coast and the Channel Islands, but Jones and Collins (unpubl. data) have only eight records for the islands.

Sturnidae

European Starling (*Sturnus vulgaris*).* Common breeder and year-round resident. Nests primarily at Wilson Cove and in structures in the surrounding area. There are also colonies in natural cavities in rock cliffs in many canyons, notably in middle Horse Canyon and at the mouth of Norton Canyon. Small numbers breed sporadically in most canyons. First recorded on SCI 5 Jun 1966 (HC), the starling was common there by 1968 (Jorgensen and Ferguson 1984).

Motacillidae

Red-throated Pipit (*Anthus cervinus*).* Very rare or casual fall migrant. Recorded from 29 Sep to 14 Nov, with a distinct peak during the first two weeks of October. There are 19 records representing approximately 19–23 individuals. The first was 30 Sep–1 Oct 2002, with one at Lemon Tank (BLS, JTB; Figure 39). Seventeen of the 19 records are from fall 2003, and at least eight of the birds were photographed. The high count is of four on 3 Oct 2003 (BLS et al.). The year 2003 was exceptional for Red-throated Pipits elsewhere in California (Sullivan 2004), and this species is likely not as regular as the number of records may suggest. It appears sporadically along the coast of mainland southern California. The Red-throated Pipit has been found rarely on the other Channel Islands with five records from Santa Catalina, San Nicolas, San Miguel and Santa Cruz islands (Small 1994, Jones and Collins unpubl. data).

American Pipit (*Anthus rubescens*).†* Uncommon fall migrant and winter visitor; rare spring migrant. Recorded from 30 Sep to 25 Apr, most frequently in October and November. Usually found in small flocks, which occasionally winter on flat uplands. The high count is of 31 above Twin Dams 24 Jan 2003 (BLS). First recorded on the basis of a specimen collected 18 Oct 1907 (Linton 1908; MVZ 316374).

Bombycillidae

Cedar Waxwing (*Bombycilla cedrorum*).* Fairly common migrant; rare winter visitor. Recorded during migration in fall from 28 Sep to 29 Nov, exceptionally as early as 9 Sep (2001, three at Lemon Tank, BLS), in spring from 13 May to 12 Jun. The extent of fall migration is confounded by small numbers wintering, with records from 5 Dec to 22 Feb, but there is a distinct fall peak during October and November. The waxwing typically occurs in small flocks; the high count is of 40 near the airfield 26 May 2001 (JAD). There were only 11 records as of 1983 (Jorgensen and Ferguson 1984).

Ptilogonatidae

Phainopepla (*Phainopepla nitens*).†* Rare migrant and summer visitor. Recorded primarily from 20 May to 20 Oct, exceptionally as early as 15 Apr (1973, PDJ) and as late as 8 Nov (1996, one at Pyramid Point, SL) and 20 Nov (1995, one in Bryce Canyon, MKS). Peak numbers typically occur from late August through September; the high count is of nine at Lemon Tank 9 Sep 2001 (CWB et al.). The Phainopepla reaches SCI largely during postbreeding dispersal. Although the first record was 15 Apr 1973 (PDJ) and there were only six records as of 1983 (Jorgensen and Ferguson 1984), this species is now regular on SCI during late summer and early fall. Adult males are more frequent in late spring than in fall, when only two have been recorded. Immatures constitute the majority of summer and early fall records. The Phainopepla bred on Santa Catalina Island in 1977 (Garrett and Dunn 1981) and is an occasional spring and fall transient elsewhere on the Channel Islands (Jones and Collins unpubl. data).

Parulidae

Tennessee Warbler (*Vermivora peregrina*).* Very rare fall migrant; casual spring migrant. Twenty fall records from 3 Sep to 17 Oct, exceptionally as late as 3–7 Nov (2001, one at Lemon Tank, JHP et al.). One spring record: one in Norton Canyon 5–12 May 2000 (SLM, CLC). The high count is of five, two at Lemon Tank and three at Wilson Cove, 11 Oct 2003 (BLS et al.).

Orange-crowned Warbler (*Vermivora celata*).†* *Contributed by Robb S. A. Kaler.* Fairly common breeder; also occurs to uncertain extent as a migrant from the mainland. The Orange-crowned Warbler, subspecies *V. c. sordida,* breeds commonly on all of the Channel Islands except Santa Barbara and San Nicolas (Small 1994), as well as locally on the coast of mainland southern California (Willett 1933). The type specimen of this subspecies is an adult male collected on SCI 25 Jan 1889 by C. H. Townsend (1890; USNM 117606). *V. c. sordida* is the darkest of the Orange-crowned Warbler's four races (Oberholser 1905) with dusky olive streaks on the breast and flanks (Unitt 1984), and dusky centers on the undertail coverts (Pyle 1997, Dunn and Garrett 1997).

Insular *V. c. sordida* is partially migratory, with some birds leaving the islands in the fall, as early as mid-July, and dispersing over the mainland as far north as the San Francisco Bay region (Grinnell and Miller 1944). *V. c. sordida* begins to return to the islands as early as December and January (Grinnell and Miller 1944, Sogge et al. 1994). Surprisingly, the only records of nests are by Howard (1906), who found six in 1905, but no effort has been dedicated to the study of this common breeder on SCI.

Migrants from the mainland also reach the island; gray-headed birds apparently of the interior subspecies *orestera* and bright individuals presumably of subspecies *lutescens* are occasionally noted during both fall and spring migration. The high count is of 41 on 21 Sep 2004 (BLS et al.).

Nashville Warbler (*Vermivora ruficapilla*).* Fairly common migrant. Recorded in spring from 30 Mar to 19 May and in fall from 30 Aug to 8 Nov, exceptionally as late as 15 Nov (2004, one at Lemon Tank, JMMcM), and 21 Nov (2002, one at Lemon Tank, RDMcM). Although the Nashville Warbler is one of the regularly occurring migrant western warblers on SCI, it is not recorded in large numbers. The high count is of nine on 23 Apr 2004 (BLS et al.).

Virginia's Warbler (*Vermivora virginiae*). Very rare fall migrant. Twelve records from 8 Sep to 10 Oct, exceptionally as early as 18 Aug (2004, one at Lemon Tank, BLS et al.). The high count is of four from 11 to 13 Sep 1974 (HLJ). No adult males have been noted. Seven of the 12 records are from Lemon Tank.

Lucy's Warbler (*Vermivora luciae*).* Casual fall migrant. Three records: an immature/female at Lemon Tank 2–7 Nov 2001 (BLS et al.; Figure 40), a male in Box Canyon 18 Sep 2003 (HAC), and an immature/female in Horse Beach Canyon 4 Oct 2003 (BLS, RSAK). There are three other records for the Channel Islands, from Santa Catalina, San Nicolas and Santa Cruz islands (Small 1994, Jones and Collins unpubl. data).

Northern Parula (*Parula americana*). Casual fall migrant. Two records: a single bird 2 Nov 1983 (SW); a male at Wilson Cove 3 Oct 2003 (RSAK et al.). There are nine other records for the Channel Islands, one in fall, eight in spring (Jones and Collins unpubl. data).

Yellow Warbler (*Dendroica petechia*).†* Uncommon migrant. Recorded in spring from 17 Apr to 1 Jun, in fall from 21 Aug to 26 Oct, exceptionally as early as 27 Jul (1997, one at the old nursery, JHG) and 9 Aug (2004, one at Lemon Tank, JMMcM) and as late as 16 Nov (1995, one at West Shore, CLC et al.). This species is sometimes seen flying overhead in small flocks on early May mornings. It was first recorded 27 Sep 1972 (HLJ). The high count is of 30 on 18 May 2002 (BLS).

Chestnut-sided Warbler (*Dendroica pensylvanica*).†* Casual fall migrant. Two records: one at the old nursery 4–5 Oct 2001 (BLS et al.) (BLS photo, JTB); one immature female at Wilson Cove 11–15 Oct 2003, found dead on the latter date (BLS et al.; SDNHM 50826). Surprisingly, there are only 11 other records for the Channel Islands, seven in fall, four in spring (Small 1994, Jones and Collins unpubl. data).

Magnolia Warbler (*Dendroica magnolia*).* Casual fall migrant. Ten fall records from 11 Sep to 13 Oct. One was collected at sea approximately 45 miles off San Diego near SCI 19 Sep 1969 (M. Manzo and M. Behrend; SDNHM 37270).

Cape May Warbler (*Dendroica tigrina*).* Accidental. One record: a female at Lemon Tank 20–27 Oct 2001 (JHP et al.; Figure 41). There are five other records for the Channel Islands, three in fall, two in spring (Small 1994, Jones and Collins unpubl. data).

Black-throated Blue Warbler (*Dendroica caerulescens*). Casual fall migrant. Two records: one male in Horse Canyon 8 Oct 2000 (SLM); one male in upper Burns Canyon 16 Oct 2002 (AVB, JL). Small (1994) considered the species exceedingly rare on the Channel Islands.

Yellow-rumped Warbler (*Dendroica coronata*).†* Common migrant; very rare winter visitor. Recorded in fall primarily from 19 Sep to 14 Nov, exceptionally as early as 11 Sep (Jorgensen and Ferguson 1984) and 12 Sep (1997, one at Stone Station, MAB) and as late as 27 Nov (2003, one at Lemon Tank, BLS). Recorded in spring primarily from 20 Mar to 15 May, exceptionally as early as 7 Mar (2004, one at Wilson Cove, SWS). Four winter records: one in Wallrock Canyon 10 Dec 1997 (SL), 12 in Eagle Canyon 21 Dec 1998 (DMC), 10 at Lemon Tank 28 Dec 1998 (DMC), and one at Lemon Tank 6 Jan 1995 (CEK). The western Audubon's

Warbler (*D. c. auduboni*) is the principal subspecies, but the eastern Myrtle Warbler (presumably *D. c. hooveri*) also occurs rarely during migration in fall from 3 to 20 Oct and in spring from 31 Mar to 15 May. Numbers of this species peak sharply in October. The fall high counts are of 114 islandwide 11 Oct 2003 (BLS, RSAK) and 50 in Cave Canyon 7 Oct 2000 (CLC, CWB); fall counts of 10–30 individuals are more typical. The spring high counts are of 100 islandwide 8 Apr 2002 (BLS) and 30 islandwide 24 Mar 2001 (BLS).

Black-throated Gray Warbler (*Dendroica nigrescens*).* Uncommon migrant. Recorded in fall primarily from 18 Aug to 30 Oct, exceptionally as early as 10 Aug (1996, one on the east shore, PAA, BJR), in spring primarily from 26 Mar to 13 May, exceptionally as early as 22 Mar (2004, one male at Stone Station, BLS). The high fall count is of seven islandwide on 11 Oct 2003 (BLS, RSAK); the high spring count is of 13 on 23 Apr 2004 (BLS et al.). During migration, this species is a regular component of mixed warbler flocks, although Jorgensen and Ferguson (1984) had only 10 records as of 1983.

Black-throated Green Warbler (*Dendroica virens*)* Casual migrant. One record: one immature/female at Wilson Cove 27–30 Oct 2003 (HAC et al., Figure 42). There are eight other Channel Islands records, two in spring, six in fall (Jones and Collins unpubl. data).

Townsend's Warbler (*Dendroica townsendi*).†* Uncommon fall migrant; very rare winter visitor; fairly common spring migrant. Recorded in fall from 17 Aug to 30 Nov, in spring from 11 Apr to 2 Jun. Eleven winter records from 6 Dec to 19 Mar. The fall high count is of seven in Norton Canyon 9 Nov 1996 (JHG). The spring high counts are of 269 islandwide 25 Apr 2004 (BLS et al.; multiparty count), 134 islandwide 26 Apr 2004 (BLS et al.; multiparty count), and 50 islandwide 18 May 2002 (BLS et al.). This species occurs more frequently in spring than fall migration, though the disparity is not as great as in the Hermit Warbler.

Hermit Warbler (*Dendroica occidentalis*).* Rare fall and fairly common spring migrant. Recorded in fall from 18 Aug to 18 Oct, exceptionally as late as 7 Nov (2002, one in Burns Canyon, AMC), in spring from 13 Apr to 22 May, exceptionally as late as 2 Jun (2002, one at Boulders South, HAC). In fall high counts are of two birds each at Box Canyon 22 Aug 1997 (SL) and at Vista Overlook 24 Aug 2002 (JL, JJD). Spring high counts are of 64 islandwide 26 Apr 2004 (BLS et al.; multiparty count), 51 on 25 Apr 2004 (BLS et al.; multiparty count; Figure 43), and 25 on 18 May 2002 (BLS). The Hermit Warbler's status on SCI is similar to that along the nearby mainland coast (Garrett and Dunn 1981). Like Townsend's Warbler, the Hermit is attracted to the oak groves on the upper east side of SCI. A Hermit × Townsend's hybrid was at Vista Overlook 25 Apr 2004 (SWS et al.).

Blackburnian Warbler (*Dendroica fusca*).* Casual fall migrant. Nine fall records from 21 Sep to 15 Oct; five records of six individuals in 2003 alone (photo front cover of this issue). First recorded 21 Sept 1981 (HLF, BJ). The high count is of three, one near Thirst and two at Wilson Cove, 11 Oct 2003 (BLS, RSAK). There are only five other records for the Channel Islands, two in spring, three in fall (Jones and Collins unpubl. data).

Yellow-throated Warbler (*Dendroica dominica*).# Accidental. One record: a bird of the subspecies *D. d. albilora* was well seen and described from the mouth of Wilson Cove Canyon 3 May 2002 (JTB; Cole and McCaskie 2004). There are only four other reports for the Channel Islands (Jones and Collins unpubl. data).

Prairie Warbler (*Dendroica discolor*).* Casual fall migrant. Five records: 22 Sep 1981 (the first for the Channel Islands, WTE et al.), one male in Horse Canyon 2 Oct 2001 (HAC), one female at Lemon Tank 17 Oct–18 Nov 2001, joined by a

Figure 36. Yellow-green Vireo at Lemon Tank 18 September 2002.

Photo by Brian L. Sullivan

Figure 37. Stonechat at the Chad's Bluff ponds, 20–21 October 1995.

Photo by Robert T. Patton

Figure 38. Sage Thrasher at Horse Beach 1 November 2003.

Photo by Brian L. Sullivan

Figure 39. Red-throated Pipit at Lemon Tank 1 October 2002.

Photo by Brian L. Sullivan

second female for only one day, 6 Nov 2001 (BLS *et* al.), and one immature male at Northwest Harbor 15 Sep 2002 (JTB; Figure 44). There are only four other records for the Channel Islands (Jones and Collins unpubl. data).

Palm Warbler (*Dendroica palmarum*).†* Very rare fall migrant; casual in winter and spring. Recorded in fall from 3 Oct to 23 Nov. Two winter records: two at Lemon Tank 18 Feb–7 Mar 1994 (JMW); one at West Shore 9 Feb 2002 (BLS). Two spring records: one 26 Mar 1975 (HLJ); one at West Cove Beach 15 Apr 2002 (NMM). Although represented by only three records as of 1983 (Jorgensen and Ferguson 1984), this species is now a rare but annual migrant. It is the most frequent "eastern" warbler on SCI with no fewer than 40 records of 47 individuals. One was found dead near Lemon Tank 23 Nov 2002 (BLS; SDNHM 50678). The high count is of five on 1 Nov 2004 (JMMcM). All records are of the western nominate race.

Bay-breasted Warbler (*Dendroica castanea*).# Casual fall migrant; accidental in summer. Three records: one male 9 Jul 1975 (KLG), one immature at Lemon Tank 4 Oct 2002 (BLS *et* al.), and one male at Lemon Tank 22 Oct 2004 (HAC). The first of this species ever collected in California came aboard a boat 39 km southeast of SCI 6 Oct 1956 (Arvey 1957, MVZ 134974). There are 11 other records for the Channel Islands, two in spring, nine in fall (Jones and Collins unpubl. data).

Blackpoll Warbler (*Dendroica striata*).* Very rare fall migrant. Sixteen records of 23 individuals from 2 to 22 Oct, exceptionally as early as 22 Sep (1981, two, WTE *et* al.) and as late as 31 Oct (2004, one at Wilson Cove, BLS photo). The high count is of eight, one at VC3, four at Lemon Tank, and three at Wilson Cove, on 11 Oct 2003 (BLS *et* al.).

Black-and-white Warbler (*Mniotilta varia*). Casual migrant. Recorded eight times in fall from 10 Sep to 31 Oct, exceptionally as late as 23 Nov (1996, one in Horse Beach Canyon, RTP), and nine times in spring from 10 May to 27 Jun.

Figure 40. Lucy's Warbler at Lemon Tank 2 November 2001.

Photo by John T. Brollini

American Redstart (*Setophaga ruticilla*).* Very rare fall and casual spring migrant. Sixteen fall records of 24 individuals from 6 Sep to 18 Oct, exceptionally as late as 2 Nov (2001, one at Lemon Tank, BLS photo, JTB). Three spring records: one female in Wilson Cove Canyon 28 May 2000 (CLC et al.), one female in Wilson Cove Canyon 27 May 2001 (BLS, ELK), and one at Wilson Cove 21 Jun 2002 (DLB). Only three of the 17 records of aged and sexed birds pertain to adult males, all of which were in October. The high count is of six from 10 to 12 Sep 1975 (PO).

Prothonotary Warbler (*Protonotaria citrea*).# Accidental. One record: one at Lemon Tank 9 Oct 2000 (CWB). There are only six other records for the Channel Islands (Jones and Collins unpubl. data).

Ovenbird (*Seiurus aurocapillus*).†* Casual migrant. Three fall records: one at Lemon Tank 16–20 Oct 2001 (BLS et al.), one at Wilson Cove 11 Oct 2003 (RSAK, BLS photo), and one at Spanish Curve 3 Oct 2004 (BLS photo). Three spring records: one found dead at Stone Station 26 May 2003 (KMS, DJH; SDNHM 50782), one at Wilson Cove 8 Jun 2004 (JMMcM et al. photo), and one in Middle Ranch Canyon 17 Jun 2004 (CML). Among the other Channel Islands this species has been recorded from San Nicolas, San Miguel and Santa Barbara (Small 1994, Jones and Collins unpubl. data).

Northern Waterthrush (*Seiurus noveboracensis*). Casual fall migrant. Recorded from 11 Sep to 8 Oct, with none since 1995. The single spring report 1 Apr 1977 (Jorgensen and Ferguson 1984) falls outside the species' season of spring migration in California so is likely erroneous, unless it pertains to an overwintering bird.

MacGillivray's Warbler (*Oporornis tolmiei*). Rare spring and fall migrant. Recorded in fall from 20 Aug to 15 Oct, exceptionally as late as 6 Nov (2001, one at VC3, JTB), in spring from 22 Apr to 31 May. First recorded 24–27 May 1968 (MLC, JMD). This species' skulking habits may explain its apparent rarity.

Common Yellowthroat (*Geothlypis trichas*). Fairly common fall and uncommon spring migrant. Recorded in fall from 1 Sep to 16 Dec (Dec records may pertain to

Figure 41. Female Cape May Warbler at Lemon Tank 20 October 2001.

Photo by Brian L. Sullivan

Figure 42. Black-throated Green Warbler at Wilson Cove 28 October 2003.

Photo by Brian L. Sullivan

Figure 43. Hermit Warbler near Lemon Tank 25 April 2004.

Photo by Brian L. Sullivan

Figure 44. Prairie Warbler at Northwest Harbor 15 September 2002.

Photo by John T. Brollini

overwintering birds), in spring from 16 Mar to 26 Apr, exceptionally as late as 19 May (2002, one at Whale Point, TMH, FB) and 10 June (2003, one heard and seen near Norton Canyon, BLS). Occurs less frequently on SCI than one would think given its abundance on the nearby mainland; though the species was first recorded 23 Mar 1915, as of 1983 there were only five records (Jorgensen and Ferguson 1984). The high fall count is of eight at Lemon Tank 10–11 Oct 2003 (BLS); the high spring count is of four at Lemon Tank 16 Mar 2004 (SWS et al.).

Wilson's Warbler (*Wilsonia pusilla*).†* Uncommon fall and fairly common spring migrant. Recorded in fall from 19 Aug to 21 Oct, exceptionally as early as 7 Aug (2004, one in China Canyon, BLS), in spring from 24 Mar to 8 Jun. The high counts are of 244 on 25 Apr 2004 (BLS et al.; multiparty count), 189 on 26 Apr 2004 (BLS et al.; multiparty count), and about 250 on 12 and 18 May 2002 (BLS). During the occasional large fallouts of this species in spring, it seems as if every small patch of vegetation or roadside grass contains a few birds. During such events, it is difficult to estimate numbers, but it is likely that many hundreds of Wilson's Warblers are on the island at such times. The species was first recorded 19 May 1914 (H. H. Kimball).

Canada Warbler (*Wilsonia canadensis*).* Casual fall migrant. Three records: one male 20 Oct 1974 (JLa; Luther et al. 1979), one male 3 Nov 1976 (PDJ), and one male at Lemon Tank 7 Oct 2001 (SL et al., Figure 45). There is but one other Channel Islands record, of one collected on Santa Rosa Island 14 Sep 1976 (SBMNH 3621).

Yellow-breasted Chat (*Icteria virens*). Casual migrant. Four fall records: one 10–12 Sep 1975 (PO), one 19 Sep 1975 (HLJ), one in Horse Beach Canyon 7 Oct 2001 (BLS), and one at Lemon Tank 7 Sep 2004 (ELK, JMMcM). Five spring records: one 21 Apr 1981 (WTE et al.), one in China Canyon 23 Apr 1995 (CEK), one in Wallrock Canyon 24 Apr 2001 (HAC, CWB), one at Eel Point 18 May 2001 (NMM), and one at Wilson Cove 5 May 2002 (BLS et al.). There are 15 other records for the Channel Islands (Jones and Collins unpubl. data).

Thraupidae

Summer Tanager (*Piranga rubra*).†* Casual migrant. Five fall records: one female of the eastern subspecies *rubra* collected 11 Oct 1907 (Linton 1908; MCZ 316660) was originally misidentified as the western subspecies *cooperi* (Rea 1972), one male at Wilson Cove 6 Oct 2001 (BLS photo, DMC), one female at Lemon Tank 11 Nov 2001 (BLS photo, AMC), one male at Lemon Tank 3 Oct 2002 (BLS; Figure 46), and one male at Wilson Cove 12 Oct 2003 (BLS). Four spring records: one male at Wilson Cove 5 May 2002 (WEH, TMH), one male at Boulders South 8 June 2002 (AMC), one female at Lemon Tank 11–12 June 2002 (BLS, AMC), and one male at Lemon Tank 27 Apr 2004 (SWS).

Scarlet Tanager (*Piranga olivacea*).# Casual migrant. Two records: one at Lemon Tank 17 Oct 1996 (RTP; McCaskie and San Miguel 1999); one female at Lemon Tank 26 Oct 2001 (BLS, AMC; Garrett and Wilson 2003). A female reported in Chukit Canyon 7 Nov 2001 was not reviewed by the CBRC but on the basis of the observer's description was likely identified correctly. This species has been recorded four other times on the Channel Islands (Jones and Collins unpubl. data).

Western Tanager (*Piranga ludoviciana*).†* Fairly common migrant in both fall and spring; often more numerous in spring. Recorded in fall from 20 Jul to 26 Oct, exceptionally as early as 8 July (2002, one male in Middle Ranch Canyon, AVB) and as late as 6 Nov (1995, one in Box Canyon, CH). Recorded in spring from 13 Apr to 8 Jun, exceptionally as early as 23 Mar (1915, Howell 1917) and as late as 30 June (2004, one in Warren Canyon, LHW, JLK). The high counts in spring are of 172 on 26 Apr 2004 (BLS et al.; multiparty count), 96 on 25 Apr 2004 (BLS et al.;

Figure 45. Canada Warbler at Lemon Tank 7 October 2001.

Photo by Brian L. Sullivan

multiparty count), 40 on 27 Apr 2004 (JMMcM et al.), and 13 in Wallrock Canyon 24 Apr 2001 (HAC, CWB). The high count in fall is of 23 on 21 Sep 2004 (BLS, JMMcM).

Emberizidae

Green-tailed Towhee (*Pipilo chlorurus*). Rare fall and casual spring migrant. Recorded in fall from 6 Sep to 10 Nov. Five spring records: one on 23 Apr 1981 (EC, WTE), one in Box Canyon 17 Apr 1999 (DLB), one at West Shore 8 Apr 2002 (CJR), one at Vista Overlook 13 Apr 2002 (BLS, AMC), and one in Norton Canyon 30 Apr 2004 (SWS, BLS). First recorded 30 Sep 1973 (JLa), the Green-tailed Towhee is typically encountered singly on SCI, though often with other sparrows at migrant traps. The high count of three is at Lemon Tank 14 Sep 2004 (JMMcM et al.).

Spotted Towhee (*Pipilo maculatus*).†* *Contributed by Robb S. A. Kaler.* Formerly resident; extirpated by 1976, as a result of habitat destruction by feral herbivores (Jones and Diamond 1976, Jorgensen and Ferguson 1984). Currently a rare migrant and winter visitor.

The island subspecies, *P. m. clementae*, remains common on Santa Catalina Island. Grinnell (1897b) described it, designating as the type specimen a male collected 31 Mar 1897 at Chenetti (Smuggler's) Cove, SCI (MVZ 36398). The insular *clementae* differs from *megalonyx* of the southern California mainland by its larger bill, longer tarsus, and paler, grayer rump in the male, paler head, back, and rump in the female (Grinnell 1897b, Ridgway 1901, Swarth 1913).

Early visitors to SCI described this towhee as a common resident (Howell 1917, Willet 1933). A three-week visit by Howell (1917) led him to believe that the birds "practically do not occur on the western end of the island." Linton (1908) found *clementae* to be "very common" near Mosquito Harbor, on the island's east side, and

Figure 46. Male Summer Tanager at Lemon Tank 3 October 2002.

Photo by Brian L. Sullivan

Figure 47. Cassin's Sparrow feeding on *Atriplex* seed near the airfield 2 November 2001.

Photo by Brian L. Sullivan

reported none within 12 km of the northwest coast. The early literature documents no nests or young (Jorgensen and Ferguson 1984). The habitat preferred was "fairly tall chaparral," particularly along the dry canyons, and often associated with the groves of Catalina cherry trees (Grinnell and Miller 1944). Jorgensen and Ferugson (1984) summarized the last sightings of *clementae*: two males in Bryce Canyon 9 Apr 1972 (Leatherwood and Coulombe 1972), one male in Horse Beach Canyon on 15 Apr 1973, and one report without details 9–11 Jul 1975.

More recent records of presumed migrants range from 21 Sep to 14 Apr, peaking in October and November. The high count is of three on six dates ranging from October to December. On 4 Dec 1908, Linton (1909) collected one *P. m. oregonus*, by far the southernmost specimen of this Pacific Northwest subspecies ever collected (MVZ 21273). On 29 Sep 1990, W. T. Everett collected one female *P. m. megalonyx* , the subspecies resident in mainland southern California (SDNHM 46949).

Cassin's Sparrow (*Aimophila cassinii*).* Accidental. One record: a single bird along the airfield perimeter road 2 Nov 2001 (BLS et al.; Figure 47). This is one of only ten fall records of the Cassin's Sparrow for California, eight of which are for Southeast Farallon Island (Garrett and Wilson 2003). There are no other records for the Channel Islands.

American Tree Sparrow (*Spizella arborea*). Casual fall migrant. Two records: one on 2 Nov 1975 (HLJ); one near Chalk Curve, China Road, 27 Oct 2000 (CWB). These represent two of only four records for the Channel Islands.

Chipping Sparrow (*Spizella passerina*).†* Rare breeder; fairly common migrant; casual winter visitor. Recorded in spring from 8 Mar to 6 May, in fall from 26 Aug to 29 Nov. Four winter records: two specimens (whereabouts unknown) taken 2 Dec 1908 (Linton 1909), one in Box Canyon 15 Jan 1996 (BJR), one in Red Canyon 22 Jan 1996 (BJR), and four at Boulders South 17 Dec 1998 (TRM). Interval of migration possibly clouded by breeders and dispersing young. The high count is of 15 at Lemon Tank 3 Oct 2002 (BLS). The Chipping Sparrow breeds in very small numbers, primarily at the southeastern end of the island. Breeding behavior and fledglings have been observed (Jorgensen and Ferguson 1984); one nest with four nestlings was in upper Canchalagua Canyon 12–13 Jun 2004 (BLS, WMF; Figure 48). Searches of Canchalagua Canyon in May and July 2003 revealed many singing males but no nesting activity (BLS, RSAK). The first specimen was collected 30 Mar 1897 (J. Grinnell; MVZ 35357).

Clay-colored Sparrow (*Spizella pallida*).* Very rare fall and casual spring migrant. Recorded 18 times in fall migration from 12 Sep (1974, first for SCI, HLJ) to 31 Oct. One spring record: one at China Beach 1 Jun 2002 (NMM). An apparent hybrid Clay-colored × Chipping Sparrow was at VC3 29 Sep–1 Oct 2004 (JMMcM, BLS; Figure 49). The high count is of two on four dates (30 Sep–21 Oct).

Brewer's Sparrow (*Spizella breweri*).* Very rare fall and casual spring migrant. Recorded in fall from 19 Aug to 17 Oct. One spring record: one at Lemon Tank 26 Apr 2004 (BLS photo, JMMcM). First recorded 11 Sep 1974 (HLJ).

Black-chinned Sparrow (*Spizella atrogularis*).†* Casual migrant. Five records: a female collected 5 Dec 1908 (Linton 1909; MCZ 317168), one heard 2 May 1974 (RS, WC), one on 23 Sep 1976 (HLJ), one on 23 Aug 1979 (PDJ), and a male singing in Box Canyon 18 Apr 1999 (DLB).

Vesper Sparrow (*Pooecetes gramineus*).* Uncommon migrant and winter visitor. Recorded from 6 Sep to 13 May, most frequently during fall migration (to 5 Nov). First recorded 26 Mar 1975 (HLJ). In fall the high count is of 20 islandwide 30 Oct 2004 (BLS, LAA), in winter it is of 50 at Lemon Tank 22 Dec 1998 (JAM), and in spring it is of four in China Canyon 24 Mar 1997 (SL).

Lark Sparrow (*Chondestes grammacus*).* Uncommon fall and casual spring migrant; casual in summer. Recorded in fall from 12 Aug to 25 Nov, exceptionally as late as 5 Dec (2001, one at Boulders South, AMC). First recorded 11 Sep 1972 (JLe). Reported as rare from 21 Apr to 13 May by Jorgensen and Ferguson (1984), but there are only two recent spring records: one at Northwest Harbor 11 Mar 1996 (BJR) and one along the road near Norton Canyon 6 Apr 2002 (BLS, AMC). The single summer record perhaps represents an early fall migrant: one in Chamish Canyon 11 Jul 2002 (JHP). The high count is of six at Lemon Tank 17 Aug 2004 (BLS).

Black-throated Sparrow (*Amphispiza bilineata*).* Casual migrant and winter visitor. Five fall records: one on 9 Nov 1980 (BJ), one at Lemon Tank 21 Sep 2000 (CWB), one at Lemon Tank 3 Oct 2001 (JTB photo), one at Lemon Tank 1 Sep 2002 (BLS photo, CRK), and one at VC3 13 Oct 2004 (JMMcM). Two winter records: one in Chenetti Canyon 29 Jan 1994 (KFC); one in Horse Beach Canyon 31 Jan 1997 (SL, JHG). Three spring records: one in Thirst Canyon 23 Feb 2004 (JMW), two in Box Canyon 26 Mar 1994 (TRM), and one at Whale Point 6 Mar 2004 (IR).

Sage Sparrow (*Amphispiza belli*).†* *Contributed by Nicole M. Munkwitz.* Fairly common breeder and resident; casual as a migrant from the mainland. Listed by the U.S. Fish and Wildlife Service (1977) as threatened, the Sage Sparrow on San Clemente Island is resident year round, mainly in maritime desert scrub dominated by California boxthorn (Figure 50). This habitat is found mainly on the island's northwest-facing marine terraces at low elevations. The highest densities of breeding Sage Sparrows are found at lower elevations along the west shore between the sand dunes and Eel Point. In late summer and early fall juveniles wander widely and can be found at higher elevations and locations far from breeding sites (BLS pers. obs.).

Grinnell (1897a) and Breninger (1904) described the San Clemente Sage Sparrow as "common on hillsides and lower mesas" during their visits to the island in 1897 and 1903. In 1907 Linton (1908) also found it common and specified that it occurred in the northwestern half of the island. The sparrow's habitat was greatly damaged by grazing of goats and sheep. In 1967, the population was limited to 93 individuals on only 74 ha (Byers 1976). Between 1979 and 1985 the population fluctuated between an estimated high of 316 in 1981 and a low of 38 in 1984 (Hyde 1985). More recent estimates of the population are 578 individuals in 1999 and up to 1519 individuals in 2002, with approximately 2100 ha recognized as suitable habitat (Beaudry et al. 2003).

Breeding typically begins between mid-February and early March, following winter rains, and ends between mid-June and early July. Pairs are monogamous for life except for uncommon cases of polygyny. The birds can raise multiple broods (up to four) each breeding season, with an average clutch size of 3.5 eggs (range 1–5). Annual estimates of nesting success are very high, between 65% and 97% (Willey 1990, Munkwitz et al. 2002). The main nesting substrate is California boxthorn, although over a dozen other plant species, including shrubs, grasses, and cacti, have been used for nesting (Figure 51). On SCI the Sage Sparrow builds grass nest cups between 5 and 50 cm from the ground (Willey 1997, Munkwitz et al. 2002). Numbers of nests found on SCI fluctuate from year to year, possibly because of variation in annual rainfall: 1999 (40 nests); 2000 (80 nests); 2001 (143 nests); 2002 (4 nests, drought year); 2003 (148 nests) (Beaudry et al. 2004).

Ridgway (1898) described the Sage Sparrow of San Clemente Island as the subspecies *A. b. clementeae* on the basis of its larger size, but he soon reversed himself, writing that " the difference proves too slight to warrant recognition of the alleged subspecies" (Ridgway 1901:268). Van Rossem (1932) resurrected *A. b. clementeae* on the basis of its longer bill and paler plumage. It was recognized in the fifth edition of the A. O. U. (1957), but Patten and Unitt (2002) questioned it. They found the difference in bill length to be insignificant and the difference in plumage color to be significant but inadequate for the subspecies to be defined on the basis of the 75% rule.

Figure 48. Chipping Sparrow nest in Canchalagua Canyon 13 June 2004.

Photo by Brian L. Sullivan

An individual of the subspecies *A. b. nevadensis* was collected 25 Nov 1939 (G. Willett; LACNHM 19703), the only evidence of migratory Sage Sparrows from the mainland reaching SCI.

Lark Bunting (*Calamospiza melanocorys*).* Very rare fall migrant; casual in spring. Recorded in fall from 16 Aug to 11 Oct, exceptionally as late as 2 Nov (1998, one at China Canyon, JAM). Three spring records: one male 10 Jun 1973 (first for SCI; HLJ), one male at the overlook near Red Canyon 28 April 2000 (KJM), and one male at Northwest Harbor 24 May 2002 (JTB; Figure 52). The high count is of five along Ridge Road 20 Sep 2000 (CWB).

Savannah Sparrow (*Passerculus sandwichensis*).†* Common migrant and winter visitor. Recorded from 13 Aug to 1 May. Occurs primarily on terraces covered with grassland, whether native or nonnative. The high count is of 40 at Lemon Tank 21 Sep 2004 (BLS, JMMcM). Almost all Savannah Sparrows reaching SCI are migrants from the north; specimens in museum collections have been labeled as *P. s. brooksi, nevadensis,* and *anthinus*—all three subspecies expected as migrants in southern California. The Large-billed Sparrow, *P. s. rostratus,* is known from two specimens taken 28 Nov 1939 (O. A. Willett; LACNHM 19686, 19687) and one bird photographed at West Cove Point 7 Oct 2002 (BLS et al.; Figure 53).

Grasshopper Sparrow (*Ammodramus savannarum*).* Very rare breeder; migratory status uncertain. Recorded in spring (local breeders?) from 27 Mar to 8 Jun, in fall from 22 Sep to 1 Nov. The first island record is also the only winter record: a single bird in Chenetti Canyon 27 Jan 1997 (JAM). The Grasshopper Sparrow began occurring during the breeding season in 2001 with a singing male at Bluff 27 Mar (BLS); the species returned in 2003 and 2004. Definite indications of breeding are one juvenile with adults near Horse Canyon 24 Jun 2003 (BLS) and one adult carrying food at the same location 13 Apr 2004 (SWS). SCI is the Grasshopper Sparrow's only known breeding location on the Channel Islands.

Fox Sparrow (*Passerella iliaca*).†* Uncommon migrant and winter resident. Recorded primarily from 20 Sep to 31 Mar, exceptionally as early as 8 Sep (2001,

Figure 49. Probable hybrid Chipping × Clay-colored Sparrow at VC3 1 October 2004.

Photo by Brian L. Sullivan

one in Norton Canyon, CWB, CRK) and as late as 18 Apr (Jorgensen and Ferguson 1984). The high count is of three at Boulders South 16 Oct 2001 (JHP). Collected specimens have been labeled as *P. i. insularis* (6), *unalaschcensis* (3), *altivagans* (2), and *monoensis* (1), but the accuracy of these identifications requires further review. Recent sightings of Fox Sparrows identified to subspecies are primarily of the Slate-colored Fox Sparrow (*schistacea* group), but two are of the Sooty Fox Sparrow (*unalaschcensis* group): one at Wilson Cove 27 Oct 2003 (BLS photo, RSAK) and one at Lemon Tank 13 Nov 2003 (BLS, RSAK).

Song Sparrow (*Melospiza melodia*).†* *Contributed by Robb S. A. Kaler.* Extirpated breeder; accidental migrant. The Song Sparrow was formerly resident but was extirpated from the island by 1973 because of destruction of habitat by feral herbivores (Jones and Diamond 1976, Power 1994) and possibly predation by feral cats. Townsend (1890) described the Song Sparrows of SCI as the subspecies *M. m. clementae*, designating as the type specimen an adult male collected 25 Jan 1889 (USNM 117620). Three subspecies of Song Sparrows have been described from the Channel Islands, *clementae* from San Clemente and Santa Rosa (where still common, Small 1994), *graminea* from Santa Barbara, and *micronyx* from San Miguel. Patten (2001) found these, plus *coronatorum* of Los Coronados Islands, to overlap extensively in both measurements and color; he recommended merging all four under the name *graminea*. *M. m. graminea* differs from the Song Sparrows of coastal mainland southern California in its grayer upperparts; the back feathers have black centers and silver-gray edges, lacking the olive-brown between the black and gray characteristic of the mainland subspecies *cooperi* and *heermanni* (these synonymized under the latter name by Patten 2001). The population on Santa Cruz Island is intermediate between *graminea* and *heermanni* (Patten 2001).

Early visitors to SCI (Grinnell 1897a, Linton 1908, Howell 1917) described the Song Sparrow as "common" to "abundant." Despite a search in 1974 by Stewart et

al. (1974), there have been no definite records of the local population since George Willett collected a breeding female 17 Feb 1941 (LACNHM 19913). Jorgensen and Ferguson (1984) summarized 10 sight records from 1941 to 1980, which may or may not represent *clementae*; all were of single birds except for two 24–27 May 1968. Since 1984 single Song Sparrows have been encountered five times in fall and winter: at Wilson Cove 1 Feb 1992 (PAA), at Mail Point 29 Nov 1995 (CLC), at Lemon Tank 25 Sep 1997 (JHG), at West Cove Beach 4 Oct 2001 (JHP), and at West Cove Beach 31 Mar 2002 (BLS). There is one recent summer record: a molting bird not identifiable to subspecies near West Shore 4 Jul 2001 (BLS, AMC).

This sparrow met its requirements for subsistence on brush- and shrub-covered hillsides, where Breninger (1904) found it feeding and nesting side by side with the Sage Sparrow. In arid environments, Song Sparrows typically breed near fresh water (Arcese et al. 2003), but this restriction did not apply to *graminea* (including *clementae*). Its needs for breeding on SCI were met in the patches of grasses growing below *Opuntia* cactus (Linton 1908). Howell (1917) suspected that at least three broods were possible each breeding season.

Lincoln's Sparrow (*Melospiza lincolnii*).†* Uncommon fall and rare spring migrant; very rare winter visitor. Recorded in fall from 9 Sep to 29 Nov and in spring from 7 Mar to 4 May. Nine winter records from 3 Dec to 19 Feb. Peak fall movement occurs throughout October; peak spring movement occurs during late March and the first half of April. The high fall counts are of 10 at SHOBA Pond 21 Oct 1995 (PAA), and nine, six at Lemon Tank and three at the old nursery, 7 Oct 2001 (BLS); the high spring count is of three in China Canyon 13 Apr 1997 (SL).

White-throated Sparrow (*Zonotrichia albicollis*).* Casual migrant. Two records: one at Wilson Cove 15 Nov 2000 (CWB, HAC); one immature at Lemon Tank 14 Nov 2003 (BLS photo). Given this species' frequency in southern California it is surprising that more have not been found on SCI.

Harris's Sparrow (*Zonotrichia querula*).† Casual fall migrant and winter visitor. Five records: one collected 15 Oct 1907 (Linton 1908; MVZ 21272), one seen 9 Dec 1976 (HLJ), one in Horse Beach Canyon 30 Jan 1994 (KFC), one at the hazmat fence 13 Oct 1997 (JAM, SL), and one immature at VC3 13 Oct 2004 (JMMcM).

White-crowned Sparrow (*Zonotrichia leucophrys*).†* Common fall migrant and winter visitor; uncommon spring migrant; casual in summer. Recorded primarily from 17 Sep to 26 Apr, exceptionally as late as 16 May (Jorgensen and Ferguson 1984). Occurs islandwide, most densely in scrub of California boxthorn, in company with the Sage Sparrow. The high count in fall is of 95, 75 at Lemon Tank and 20 at VC3, 18 Oct 2004 (JMMcM); the high count in spring is of 25 at Lemon Tank 23 Apr 2004 (BLS, JMMcM). Two summer records of single birds: 23 Jun 2002 (AVB) and 22 Jun 2004 (SWS); neither was identified to subspecies. The subspecies *Z. l. gambeli* is a common migrant and winter resident, and all extant specimens are of it. One immature of a dark-lored subspecies, most likely *Z. l. oriantha*, was at Lemon Tank 28 Nov 2002 (BLS, JHP).

Golden-crowned Sparrow (*Zonotrichia atricapilla*).†* Uncommon migrant and winter visitor. Recorded primarily from 3 Oct to 26 Apr, exceptionally as late as 4 May (2003, one at West Shore, FB) and 9 May (Jorgensen and Ferguson 1984). The high count in fall is of 12 at Lemon Tank 30 Oct 2004 (BLS, JMMcM); the high count in spring is of 50 in Cave Canyon 6 Apr 1997 (JAM). Normally flocks of 5–20 occur during winter. This species is rarely found in the boxthorn scrub favored by the White-crowned Sparrow; rather, it is found more often on canyon slopes typically vegetated with sagebrush. Fall arrivals are almost entirely of immature birds, perhaps because of SCI's lying near the southern end of the species' winter range.

Dark-eyed Junco (*Junco hyemalis*).†* Uncommon migrant and winter visitor. Recorded primarily from 20 Sep to 14 Apr, exceptionally as early as 11 Sep (Jorgensen and Ferguson 1984) and as late as 20 May (2001, one male in Chamish Canyon, BLS). The high counts are of 100 in Eagle Canyon 2 Mar 2002 (ELK) and 23 at Pyramid Point 18 Nov 2001 (JTB et al.). Most of the birds are Oregon Juncos, at least *J. h. thurberi*, collected 13 Oct 1907 (Linton 1908), with probably a minority of subspecies *shufeldti* and *montanus* as well. Also, the Pink-sided Junco (*J. h. mearnsi*) has been recorded four times: one at Stone Station 17 Dec 1996 (TMH), one male at Lemon Tank 20 Sep 2002 (BLS, AMC), one male at VC3 17 Nov 2002 (BLS), and one male at Wilson Cove 15 Oct 2004 (JMMcM, BLS). The Slate-colored Junco (*J. h. hyemalis* and/or *cismontanus*) has been recorded four times: one in Cave Canyon 11 Nov 1996 (JMW), one in China Canyon 8 Dec 1996 (TMH), one male at Lemon Tank 25 Oct 2002 (BLS, ELK), and one male at Lemon Tank 15 Nov 2002 (BLS, AMC). The Gray-headed Junco (*J. h. caniceps*) has been recorded seven times from 6 Oct to 27 Mar.

McCown's Longspur (*Calcarius mccownii*).* Casual fall migrant. Four records, all from Lemon Tank: one female 8 Oct 2002 (BLS), one male 24 Oct 2002 (BLS et al. photo), one female 11 Oct 2003 (BLS, RSAK), and one male 22–23 Nov 2003 (BLS; Figure 54).

Lapland Longspur (*Calcarius lapponicus*).* Rare fall migrant. There are 20 records from 2 Oct to 9 Dec (Figure 55). The high count is of eight, five near the eucalyptus tree and three at China Point, 31 Oct 2004 (JMMcM, BLS). First recorded on 23 Oct 2000, one along Ridge Road (CWB, HAC). Jones and Collins (unpubl. data) consider the Lapland Longspur an uncommon fall and rare spring transient on the Channel Islands in general, recorded on three of the islands besides San Clemente.

Chestnut-collared Longspur (*Calcarius ornatus*).* Very rare fall migrant; casual in winter and spring. Recorded in fall 11 times, primarily from 2 Oct to 2 Nov, exceptionally as late as 22–23 Nov (2003, two at Lemon Tank, BLS photo) and 16 Dec (1980, first island record, HLF). One winter record: three at the airfield 6 Feb 2002 (BLS et al.). One spring record: one 15–22 Apr 1981 (EC, WTE). The high count is of four at Lemon Tank 26 Oct 2003 (BLS). Jones and Collins (unpubl. data) have only 9 or 10 total records for the Channel Islands through 2002.

Snow Bunting (*Plectrophenax nivalis*).#* Accidental. Two records: one at Lemon Tank 15–27 Nov 2003, found again near VC3 11–21 Feb 2004 (BLS et al.; San Miguel and McGrath 2005; Figure 56); one, perhaps the same individual returning, photographed near Wilson Cove 3–14 Nov 2004 (JMMcM et al.; CBRC in review). These are the southernmost records of the Snow Bunting along the Pacific coast and the only records of it for the Channel Islands.

Cardinalidae

Rose-breasted Grosbeak (*Pheucticus ludovicianus*).* Very rare migrant. Twenty spring records from 19 May to 25 Jun; 20 fall records from 9 Sep to 20 Oct, exceptionally as early as 16 Aug (2004, one male at Chad's Bluff; Figure 57) and 27 Aug (1980, one immature, EC, HLF) and as late as 2 Nov (2003, one immature male at Thirst, BLS et al. photo) and 25 Nov (1996, one male in Eagle Canyon, JMW). Although the Rose-breasted Grosbeak was first recorded on SCI 9 Jun 1973 (HLJ), and there were only two records as of 1983 (Jorgensen and Ferguson 1984), it has since proven to be a nearly annual spring and fall migrant. The high count is of three at Wilson Cove 4 Jun 2001 (BLS, DMC).

Black-headed Grosbeak (*Pheucticus melanocephalus*).* Fairly common migrant; casual in summer. Recorded primarily in spring from 28 Mar to 25 May, exceptionally as late as 11 Jun (Jorgensen and Ferguson 1984), and in fall from 19 Jul to 12

Oct. Two summer records: one male in China Canyon 21 Jun 1997 (SL); one male in Chamish Canyon 8 Jul 2002 (BLS, AMC). The Black-headed Grosbeak was first recorded on SCI 9 Sep 1972 (HLJ). It is more numerous in spring than in fall. In spring the high counts are of 26 on 25 Apr 2004 (JMMcM et al.) and 16 on 26 Apr 2004 (SWS et al.); in fall the high count is of six in Eagle Canyon 27 Sep 1997 (JHG).

Blue Grosbeak (*Passerina caerulea*).* Rare spring and very rare fall migrant. Fifteen spring records primarily from 13 Apr to 31 May, exceptionally as early as 9 Apr (2004, one male at Wilson Cove, SWS); 10 fall records from 25 Aug to 11 Oct. The high counts are of three, two at Vista Overlook and one at VC3, 25 Apr 2004 (BLS, JMMcM) and two on the terrace above Tota Canyon 13 Apr 2002 (HAC).

Lazuli Bunting (*Passerina amoena*).†* Very rare breeder; fairly common migrant. Recorded in spring from 5 Apr to 27 May, exceptionally as early as 19 Mar (2004, one male at Wilson Cove, LAA) and as late as 9 Jun (Jorgensen and Ferguson 1984); in fall from 20 Aug to 27 Sep, exceptionally as early as 3 Aug (2002, one female at Lemon Tank, BLS, AMC) and 6 Aug (1997, one at Wilson Cove, FAJ). Jorgensen and Ferguson (1984) reported the fall interval as extending through 13 Oct, but our data do not support this. The high counts are of 77 on 25 Apr 2004 (BLS et al.), 33 on 26 Apr 2004 (JMMcM et al.), and 15 in Wallrock Canyon 24 Apr 2001 (HAC, CWB). The Lazuli Bunting was first recorded on SCI 14 Apr 1973 (HLJ); its breeding has been suspected since 1995 and is likely regular in the island's southeast canyons. Two nests have been found: one with eggs was photographed in Box Canyon spring 1998 (JAM, SL) and one at Wilson Cove to which a female was delivering a food item 27 May 2001 (BLS, ELK). Attempts to locate breeding pairs in June 2003 found only males singing territorially in many canyons of the southeast corner of the island (BLS, RSAK).

Indigo Bunting (*Passerina cyanea*).* Very rare migrant. Fifteen spring records from 28 Apr to 12 Jun, exceptionally as late as 30 Jun (2002, one female at Lemon Tank, BLS, AMC); eight fall records from 16 Sep to 13 Oct. The high count is a remarkable 10 (six males) in Wilson Cove Canyon 19–21 May 2001 (CWB).

Painted Bunting (*Passerina ciris*).†* Casual migrant. One record: a female found in the cache of a Loggerhead Shrike at Wilson Cove 22 Aug 2003 (HAC; SDNHM 50815; San Miguel and McGrath 2005). The remains of this individual represent the first record of a probable natural vagrant Painted Bunting for Los Angeles County and the only record for the Channel Islands.

Dickcissel (*Spiza americana*). Casual fall migrant. Nine fall records from 15 Sep to 17 Oct; four of these from fall 2003. Most Dickcissels are detected by call, but several have been found with mixed sparrow flocks at Lemon Tank. The high count is of two at Lemon Tank 4 Oct 2003 (BLS, RSAK). The Dickcissel was first definitively recorded on SCI 29–30 Sep 1997, with one at VC3 (JHG et al.). Jorgensen and Ferguson (1984) reported two tentative identifications: one heard and seen at a distance 19 Sep 1975 and three heard 23 Sep 1976 (HLJ).

Icteridae

Bobolink (*Dolichonyx oryzivorus*).* Rare fall migrant; casual in spring and summer (Figure 58). Twenty-four records from 5 Sep to 29 Oct. One spring record: a male in China Canyon 8 June 2004 (BLS photo, WMF). The high count is of nine on 29 Sep 2003, eight together at Lemon Tank and one at Vista Overlook (BLS, RSAK). One summer record of a male 22 Jul 1979 (HLF, PDJ), perhaps an early fall migrant. First recorded 12 Sep 1974 (HLJ).

Red-winged Blackbird (*Agelaius phoeniceus*).* Rare fall and casual spring migrant; casual in winter and summer. Recorded in fall from 14 Oct to 16 Nov, exceptionally

as late as 30 Nov (1980, one, PDJ). One winter record: a flock of up to 14 (the high count for the island) at Lemon Tank 11 Dec 1995–2 Jan 1996 (MKS et al.). Four spring records: one on 26 Mar 1975 (Jorgensen and Ferguson 1984), eight near Bluff 7 Mar 1997 (JHG), eight at Lemon Tank 26 Apr 1997 (JHG), and one at Lemon Tank 4 Apr 2003 (BLS). Two summer records: one on 10 Jun 1973 (Jorgensen and Ferguson 1984); one female at Lemon Tank 3 Aug 2002 (BLS, AMC). First recorded 10 Jun 1973 (HLJ).

Tricolored Blackbird (*Agelaius tricolor*).* Casual visitor. Two records: one male at Lemon Tank 27 Jun 2003 (BLS et al. photo); one male at the airfield 9 June 2004 (JMMcM, ELK). There are only 10 other records for the Channel Islands (Jones and Collins unpubl. data).

Western Meadowlark (*Sturnella neglecta*).†* Abundant breeder and permanent resident of grasslands islandwide. Currently perhaps the most common passerine on SCI, though Linton (1908) also considered it "common." The population is unknown, but we estimate thousands of breeding pairs. A drive down Ridge Road in late May can produce counts of several hundred within 25 m of the road. The meadowlark breeds from March to June, but because of its high frequency little attention has been paid to its breeding biology on SCI, and few nests have been found. One nest with young was on the terrace above Bryce Canyon 15 Mar 2003 (BLS).

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*).* Rare fall and casual spring migrant; casual in summer. About 50 fall records from 25 Aug to 25 Oct; six spring records from 8 Apr to 13 May. Two summer records: one on 14 Jul 1972 (first for SCI; HLJ); one male at Twin Dams 15 Jul 2001 (EAU). The high count is of five along Ridge Road near Lemon Tank 17 Sep 1997 (JHG).

Rusty Blackbird (*Euphagus carolinus*).†* Casual fall migrant and winter visitor. Five records: one specimen taken 20 Nov 1908 (Linton 1909; MVZ 21271), two on 1 and 2 Nov 1975 (HLJ), one at Northwest Harbor 15 Nov 1996 (WTE), one female at VC3 14–28 Feb 2002 (BLS et al. photo), and one male at Lemon Tank 24 Oct 2002 (SL et al., Figure 59).

Brewer's Blackbird (*Euphagus cyanocephalus*).* Uncommon fall and rare spring migrant; casual winter visitor. Recorded in fall from 10 Sep to 23 Nov, exceptionally as early as 31 Jul–15 Aug (2000, one near Lemon Tank, KJM, CLC), in spring from 14 Apr to 13 May. Peak numbers occur from mid-October through November, and the high count is 11 at the airfield 20 Oct 2004 (JMMcM). There are approximately seven winter records from 3 Dec to 14 Feb. The winter high count is of 15 at Lemon Tank 11 Jan 1993 (CEK). The species was first recorded on SCI 15 Dec 1972 (PDJ).

Brown-headed Cowbird (*Molothrus ater*).* Uncommon migrant; rare in summer and winter. Recorded in spring from 27 Mar to 4 Jun and in fall from 17 Jul to 22 Nov, most frequently during September and October. The high count is of 57 at Northwest Harbor 22 Oct 2002 (JTB). Several flocks passed over Wilson Cove in the evening on 15 and 16 Oct 2004 (TRL, BG). The Brown-headed Cowbird is recorded in winter from 8 Dec to 16 Feb. It is the most frequent migrant icterid on SCI, recorded in every month. As of yet, no parasitism of local passerines has been documented. Though this species was first recorded on SCI as recently as 17 Jul 1972 (HLJ), it was reportedly more common when livestock were present (Jorgensen and Ferguson 1984).

Bronzed Cowbird (*Molothrus aeneus*).# Accidental. One record, the only one of the Bronzed Cowbird for the Channel Islands: a juvenile of the western subspecies *loyei* was seen at close range and heard vocalizing at the mouth of Horse Beach Canyon 31 Aug 2003 (BLS, RSAK).

Orchard Oriole (*Icterus spurius*). Casual fall migrant. Three records, all of single fe-

Figure 50. Adult Sage Sparrow, July 2000.

Photo by Fred Beaudry

Figure 51. Sage Sparrow nest in *Senecio* at West Shore, March 2003.

Photo by Nicole M. Munkwitz

Figure 52. Male Lark Bunting at Northwest Harbor 24 May 2002.

Photo by John T. Brollini

male or immature birds: at Lemon Tank 20 Sep 2002 (BLS, AMC), in Kinkipar Canyon 30 Sep 2003 (BLS, RSAK), and at VC3 25 Aug 2004 (JMMcM). There are only two other records for the Channel Islands, both in fall (Jones and Collins unpubl. data).

Hooded Oriole (*Icterus cucullatus*).* Uncommon migrant. Recorded in spring from 16 Mar to 5 May, exceptionally as late as 19 May (2002, one at Whale Point, TMH, FB), and in fall from 21 Jul to 21 Sep, exceptionally as late as 6 Oct (2002, one female at Lemon Tank, BLS, RDMcM), 8 Oct (2003, one female at Lemon Tank, BLS), and 20 Oct (Jorgensen and Ferguson 1984). The high count is of seven at VC3 and Lemon Tank 18 Sep 2004 (BLS). The species was first recorded on SCI 11 Sep 1974 (HLJ).

Bullock's Oriole (*Icterus bullockii*).* Uncommon migrant. Recorded in spring from 14 Mar to 4 Jun, in fall from 7 Aug to 23 Oct, exceptionally as early as 21 Jul (1992, one in Wallrock Canyon, PAA) and 27 Jul (1997, one each at three locations, JHG) and as late as 8 Nov (2001, two at Wilson Cove, JTB). During spring migration peak numbers occur from early April through early May; during fall migration they occur from mid-August to mid-September. In spring the high counts are of nine on 23 Apr 2004 (BLS et al.) and eight on 10 Apr 2004 (BLS et al.); in fall they are of six at Lemon Tank 24 Aug 2004 (HAC), and five, three at VC3 and two at Wilson Cove, 21 Aug 2004 (JMMcM). Bullock's Oriole was first recorded on SCI 31 Mar 1907 (Linton 1908).

Baltimore Oriole (*Icterus galbula*).* Casual migrant. Six spring records from 16 May to 2 Jun. Three fall records: one male in Bryce Canyon 13 Oct 1997 (MAB), one male at the old nursery 7 Oct 2001 (BLS, DMC), and one immature male at the overlook near Chenetti Canyon 14 Sep 2002 (BLS, JMMcM). The high count is of three (two males, one female) in Wilson Cove Canyon 20 May 2001 (FB et al.). Seven of nine sexed individuals have been males.

Figure 53. Large-billed Savannah Sparrow on West Cove Point 7 October 2002.

Photo by Brian L. Sullivan

Scott's Oriole (*Icterus parisorum*).* Casual migrant and winter visitor. Four fall records: one in Horse Canyon 31 Oct 1993 (CEK), one in Box Canyon 7 Oct 2001 (SL, LAB), one in Box Canyon 17 Nov 2001 (NW), and one at Thirst 4 Oct 2003 (BLS photo). One winter record: up to five in Horse Canyon 4–8 Dec 1998 (TRM, DMC). Four spring records: one female in Horse Beach Canyon 6 Apr 1996 (BJR), two in China Canyon 30 Mar 1997 (SL), one in Cave Canyon 6 Apr 1997 (SL), and one male in Vista Canyon 26 May 2004 (WMF). There are 24 total records for the Channel Islands (Jones and Collins unpubl. data).

Fringillidae

Purple Finch (*Carpodacus purpureus*). Casual migrant. Four fall records: one on 8 Nov 1975 (PDJ), one in Norton Canyon 19–27 Nov 1995 (BJR, CLC), one in Box Canyon 9 Oct 1996 (PRB), and eight near Horse Canyon 27 Oct 2002 (SL). Two spring records: one on 15 Apr 1973 (HLJ); one on 3 May 1974 (WC, RS).

House Finch (*Carpodacus mexicanus*).†* *Contributed by Robb S. A. Kaler.* Common breeder and resident. The House Finch is resident on all the Channel Islands, although it does not breed annually on Santa Barbara Island (Garrett and Dunn 1981). Mearns (1898) described the island birds as the subspecies *C. m. clementis*, designating as the type specimen an adult male collected on SCI 25 Aug 1894 (USNM 134784). The primary difference between *clementis* and the mainland subspecies *C. m. fontalis* is the longer and thicker bill of *clementis* (van Rossem 1925, Power 1971). However, there is considerable overlap, too much for recognition of *clementis* as a subspecies under the criterion of 75% nonoverlap, whether bill length, width, or depth is considered separately or all three are combined (Kaler and Unitt unpubl. data). Howell (1917), Dawson (1923), and Willett (1933) had all questioned the validity of *clementis*.

Grinnell (1897a) reported the House Finch to be "the most abundant bird on San

Figure 54. Male McCown's Longspur at Lemon Tank 23 November 2003.

Photo by Brian L. Sullivan

Figure 55. Lapland Longspur at VC3 21 November 2003.

Photo by Brian L. Sullivan

Figure 56. Snow Bunting at Lemon Tank 22 November 2003.

Photo by Brian L. Sullivan

Figure 57. Male Rose-breasted Grosbeak on San Clemente Island 16 August 2004.

Photo by Brian L. Sullivan

Clemente Island," and Linton (1908) described it as an "abundant resident everywhere." The nesting season is protracted, typically beginning in early February and possibly continuing into August. Howell (1917) speculated that the birds raise at least three clutches each year. Nests are protected in the arms of a cactus, typically cholla, or in the niches of the canyon walls (Grinnell 1897a, Breninger 1904, Howell 1917). Grinnell and Miller (1944:454) noted the importance of cacti "in the economy of this race, serving as a source of fruit, affording secure nest emplacements, and probably meeting needs for water where springs are absent and vegetation otherwise is dry."

Pine Siskin (*Carduelis pinus*).* Very rare fall migrant. Recorded from 8 Oct to 27 Nov. The high count is of 22 on 8 and 9 Nov 1975 (PDJ). The Pine Siskin was first recorded on SCI 31 Oct 1975 (HLJ), and there were just four records before fall 2004, but we encountered the species regularly during that year's invasion. It is irruptive (Garrett and Dunn 1981) and likely reaches SCI whenever it invades southern California.

Lesser Goldfinch (*Carduelis psaltria*).* Fairly common migrant; rare in summer and winter. Recorded in spring from 8 Mar to 26 Apr, exceptionally as late as 7 May (2002, one at West Cove Beach, ELK) and 20 May (2001, one in Chamish Canyon, BLS), in fall from 12 Aug to 19 Nov, exceptionally as early as 1–2 Aug (2001, 20 at Stone Station, highest count for SCI, JTB photo). Numbers are highest from late August to October. The Lesser Goldfinch is less common but still regular during spring with peak numbers in late March and April. Six winter records from 5 Dec to 19 Feb. Two summer records: two at Stone Station 20 June 2000 (CLC); two in Burns Canyon 1 July 1997 (BJR). First recorded on SCI 11 Sep 1974 (HLJ), the Lesser Goldfinch has been noted there in every month, although breeding is not suspected.

Lawrence's Goldfinch (*Carduelis lawrencei*).* Very rare fall migrant; casual in spring and summer. Nine fall records from 20 Sep to 24 Oct, exceptionally as late as 14 Nov (2004, one male at Spanish Curve JMMcM, LAA). The high count is of seven at Lemon Tank 10 Oct 2002 (BLS, RDMcM). Three spring records: two on 14 May 1976 (PU), one in Horse Canyon 4 Apr 1997 (JHG), and one in China Canyon 30 Mar 2002 (BLS). One summer record: one on 10 Jul 1975 (KLG).

American Goldfinch (*Carduelis tristis*). Rare fall and casual spring migrant. Recorded in fall from 10 Aug to 9 Nov, when the high count is of five in China Canyon 5 Oct 1996 (MAB). Five spring records: two about 10 km apart on 12 May 1980 (HLF), one in Norton Canyon 31 Mar 2002 (BLS, AMC), one female at Lemon Tank 14 Jun 2002 (BLS et al.), six at Lemon Tank 13 May 1997 (JHG et al.), and one in Warren Canyon 13 Mar 2004 (SWS).

Passeridae

House Sparrow (*Passer domesticus*).* Common breeder and resident. So far, the House Sparrow occurs only near man-made structures and breeds primarily at Wilson Cove, VC3, the airport, and Bud's Camp (Northwest Harbor). It was first recorded on SCI 30 Mar 1915 (Howell 1917).

HYPOTHETICAL SPECIES

Redhead (*Aythya americana*). The identification of a single bird reported 1–4 Jun 1981is likely correct, but the lack of supporting details warrants listing the species as hypothetical. Jones and Collins (unpubl. data) know of only one acceptable record for the Channel Islands (from Thompson Reservoir, Santa Catalina Island, Garrett and Dunn 1981) plus three hypothetical reports.

Canvasback (*Aythya valisineria*). A single male was reported at Lemon Tank 16

Oct 1996. Jones and Collins (unpubl. data) know of only two other records for the Channel Islands, one each for Anacapa and Santa Catalina, underscoring this species' rarity offshore.

Barrow's Goldeneye (*Bucephala islandica*). The report of a male off Boulders South 14 Jan 1999 is not supported by details. There are no well-supported records for Los Angeles County. This species is casual in coastal southern California (Garrett and Dunn 1981) and easily confused with the more likely Common Goldeneye.

White-winged Scoter (*Melanitta fusca*). Two reports: four on 16 Sep 1979; one off Boulders South 17 Dec 1996. The date of 16 Sep is over one month earlier than the species' normal arrival in southern California; the 17 Dec report lacks details. The lack of records for SCI underscores Garrett and Dunn's (1981) assessment of the species as "quite scarce" around the southern Channel Islands. Jones and Colllins (unpubl. data) have only two records for San Nicolas Island, two for Santa Barbara Island, and "several" old records for Santa Catalina Island.

Black Scoter (*Melanitta nigra*). A report without details of one at Northwest Harbor 4 Oct 1997 must be considered hypothetical.

Common Merganser (*Mergus merganser*). A female or immature was reported without details from 19 Jan through 19 Feb 2001, first in West Cove, and then in Wilson Cove. Although this species occurs regularly on deep freshwater lakes in southern California, it is rare on the ocean where the Red-breasted Merganser is common (Garrett and Dunn 1981). We can find no other record of this species on the Channel Islands.

Red-necked Grebe (*Podiceps grisegena*). Reported only on the basis of bones found in hunter–gatherer middens approximately 3500 years old (Porcasi 1999a). This species is a rare visitor to the coast of southern California with scattered records inland (Garrett and Dunn 1981). The remains found on SCI should be reexamined, as there is no other record of the Red-necked Grebe for the Channel Islands.

Streaked Shearwater (*Calonectris leucomelas*). The report of one moving south past West Cove Point with Pink-footed and Sooty Shearwaters 24 Nov 2002 was rejected by the CBRC on the basis of the description's failing to eliminate a light-morph Wedge-tailed Shearwater (*Puffinus pacificus*) and Cory's Shearwater (*C. diomedea*) (San Miguel and McGrath 2005). The year 2002 was exceptional for the Streaked Shearwater in North America with no fewer than five recorded in California waters (McCaskie and Garrett 2003, Terrill et al. 2003).

American White Pelican (*Pelecanus erythrorhynchos*). Two reports: likely the same individual seen off Thirst Canyon 9 May 2001 and again off Lost Point 11 June 2001. The occurrence at Southeast Farallon Island during fall 2001 of a Pink-backed Pelican (*P. rufescens*), a species that at a distance closely resembles the American White Pelican, confounds the identification of this individual (J. Teitz pers. comm.).

Cooper's Hawk (*Accipiter cooperii*). Adequate documentation for this species on SCI is still lacking. Several birds initially indentified as Cooper's Hawks later proved to be the more common Sharp-shinned Hawk. Of the 11 reports from 8 Nov to 8 Apr, none is well documented. This species was unrecorded during two years of standardized raptor surveys, on which the Sharp-shinned Hawk was encountered regularly (Cooper et al. 2003). Although Small (1994) suggested that Cooper's Hawk is uncommon to rare on all the larger Channel Islands, and Jones and Collins (unpubl. data) consider it an occasional winter visitor there, the lack of records from SCI indicates otherwise. This species has nested at least once on Santa Cruz Island (Jones and Collins unpubl. data).

Swainson's Hawk (*Buteo swainsoni*). One report not supported by details of age

Figure 58. Bobolinks at Lemon Tank 19 September 2004.

Photo by Brian L. Sullivan

Figure 59. Rusty Blackbird at Lemon Tank 24 October 2002.

Photo by Tony R. Leukering

or morph: one on the plateau above Tota Canyon 1 Dec 1995. Given the species' rarity on the Channel Islands—just two records early in the 20th century for Santa Catalina and Santa Cruz (Small 1994)—the identification is not acceptable without further supporting details.

Ferruginous Hawk (*Buteo regalis*). Two reports lack adequate documentation: one immature near Bluff 7 Jan 1997; one immature over Wilson Cove 6 Mar 2002, seen disappearing over the water toward Santa Catalina Island as it was chased by adult Red-tailed Hawks. There is one record from Anacapa Island (Jones and Collins unpubl. data).

Golden Eagle (*Aquila chrysaetos*). Two reports: Mearns (unpubl. notes) listed this species 23–28 August 1894 but did not include it in his subsequent account (Mearns 1907), raising doubt as to the validity of the record. A navy research team reported a subadult 6 Nov 1974 but provided no further details. The species' colonization of Santa Cruz and Santa Rosa islands suggests that Golden Eagles may wander among the Channel Islands, and the date of the latter SCI report falls within the interval expected for a fall migrant. The Golden Eagle has apparently been recorded from Santa Catalina Island (Jones and Collins unpubl. data). That said, this species is unrecorded on Point Loma, emphasizing its rarity as a migrant in coastal southern California (G. McCaskie pers. comm.).

American Oystercatcher (*Haematopus palliatus*). Three records of oystercatchers resembling the American likely pertain to hybrids; none has been adequately documented as a pure American: three on China Beach 18 Dec 1995 were not submitted to the CBRC for review, one on 4 and 5 Aug 1999 was not supported by the CBRC (Rogers and Jaramillo 2002), and on the basis of written details one at Eel Point 24 Apr 2001 could not be safely called a pure American Oystercatcher (Garrett and Wilson 2003). A hybrid nested successfully with a Black Oystercatcher at Seal Cove in spring 2002 (RGD photo). *Haematopus p. frazari* can show considerable black flecking below and often a blurry demarcation between white and blank on the upper chest, confounding the identification. Hybrid oystercatchers on SCI have been identified primarily on the basis of their mottled blackish undertail coverts, typically pure white in *H. p. frazari*.

Semipalmated Sandpiper (*Calidris pusilla*). Two reports lacking sufficient details: one at Northwest Harbor 13 Oct 1995; one on West Cove Beach 13 Sep 2000. The one for October falls outside the main period of occurrence (early July to early September) for fall migrants in California (G. McCaskie pers. comm.).

Mew Gull (*Larus canus*). Three reports: nine birds together, including four subadults, 10 Dec 1976, one at West Cove Beach 6 Jan 1994, and one at Wilson Cove 3 Nov 1995. Although the Mew Gull is a fairly common to locally common winter visitor on the northern Channel Islands (Garrett and Dunn 1981, Jones and Collins unpubl. data), the lack of substantiated records for SCI underscores this species' rarity on the southern Channel Islands.

Iceland Gull (*Larus glaucoides*). A report of a first-winter bird of subspecies *L. g. kumleini* from West Cove Beach 21 Mar 1997 was rejected by the CBRC as identification not established (Rottenborn and Morlan 2000). The extreme difficulty of distinguishing this species from the similar Thayer's Gull makes any record without a photograph or specimen difficult to accept.

Glaucous Gull (*Larus hyperboreus*). A first-winter bird was reported at Wilson Cove 5 Feb 2002. Garrett and Dunn (1981) cited two other records for the Channel Islands, both from San Miguel Island in March.

Spotted Dove (*Streptopelia chinensis*). One was reported in China Canyon 1 April 2001. Given this species' sedentary habits and declining population in California, this record requires further documentation to be acceptable.

Lesser Nighthawk (*Chordeiles acutipennis*). A nighthawk thought to be this species was seen on China Beach 24 May 2003; however, the bird was not vocal, and the identification, based solely on flight characteristics, was left as probable. A nighthawk hit by a vehicle on the road at Thirst in spring 1999 was also thought to be this species, but the specimen was not preserved, and the identification is tentative. A reported Common Nighthawk in Cave Canyon 29 Apr 1993, if correctly identified to genus, pertains to this species. The Lesser Nighthawk has been recorded as a transient on the other Channel Islands (Garrett and Dunn 1981, Jones and Collins unpubl. data), and a conclusive identification from SCI seems only a matter of time.

Common Nighthawk (*Chordeiles minor*). One was well seen but not heard near the airstrip 20 June 2003. Other nighthawks thought to be the Common were seen at the mouth of Norton Canyon 30 Jun 2002 and in Horse Canyon 19 Jul 2003. Given this species' rarity in coastal southern California (Garrett and Dunn 1981), sight records without vocalizations are not acceptable, although the dates are within the interval when the Common Nighthawk is plausible. The only record for the Channel Islands is of one on Santa Barbara Island 21 Jun 1992 (Small 1994).

Ruby-throated Hummingbird (*Archilochus colubris*). One report rejected as identification not established: an immature male at Lemon Tank 8 Oct 2003 (San Miguel and McGrath 2005). The observers were not able to note the shape of the outer primaries, a key feature in distinguishing the Ruby-throated from the Black-chinned Hummingbird and from hummingbirds of the genus *Calypte*.

Eastern Phoebe (*Sayornis phoebe*). A report of one in upper China Canyon 6 Oct 2001 lacks details and falls outside the species' typical interval of occurrence in California. The Eastern Phoebe is a rare fall transient and winter visitor on the Channel Islands in general (Jones and Collins unpubl. data).

Sulphur-bellied Flycatcher (*Myiodynastes luteiventris*). A flycatcher showing field marks consistent with a Sulphur-bellied Flycatcher was seen in lower Box Canyon on 10 June 2001. Unfortunately, several other species of similar flycatchers uncrecorded in California could not be definitively ruled out, and there are no spring records of the Sulphur-bellied from mainland California. The observer's original description: "On my arrival, a Loggerhead Shrike was chasing a flycatcher in the vicinity of the zipline. It chased the bird up the canyon directly below me, where I was able to clearly see a bright rusty tail, streaked upper parts and sides, and a large striped head. The flycatcher ducked into a low *Rhus* below the OP and the shrike followed, landing on the ground and soon flushing the flycatcher from the bush. The shrike continued to chase the flycatcher up and down the canyon until it finally flew around the bend up canyon from the nest."

Gray Vireo (*Vireo vicinior*). Even more so than the Bell's Vireo, this species is rarely recorded away from breeding areas in southern California. There are three reports of single birds for SCI, all falling within a span of three days in late September: one 23 Sep 1976, one in Bryce Canyon 21 Sep 2000, and one at Vista Overlook 21 Sep 2001. There are eight reports for the Channel Islands, none supported with a specimen or photograph (Jones and Collins unpubl. data).

American Crow (*Corvus brachyrhynchos*). Reported only on the basis of a prehistoric bone found in the middens of early maritime hunter–gatherers (Porcasi 1999a). The identification should be verified independently, as this would constitute the only record for SCI. Possibly this species was killed on the mainland and brought to SCI as food. The crow has recently colonized Avalon, Santa Catalina Island (BLS pers. obs.), and its eventual dispersal to SCI seems likely. There are at best three or four other records for the Channel Islands, and any American Crow sightings for the islands should be thoroughly documented (Jones and Collins unpubl. data).

Canyon Wren (*Catherpes mexicanus*). One was reported in China Canyon 22 Nov 1997. While this species is primarily sedentary in coastal California, vagrants have been reported. The report of this species as resident in small numbers on Santa Cruz Island (Garrett and Dunn 1981) may be based on only a single individual (Jones and Collins unpubl. data). There are no other records for the Channel Islands.

Cactus Wren (*Campylorhynchus brunneicapillus*). Mailliard (1918) reported that Barton W. Evermann saw several near Wilson Cove, but he collected no specimens. Given this species' sedentary habits it seems likely that the report was in error.

Western Bluebird (*Sialia mexicana*). Linton (1909) reported collecting a male in Dec 1908, but we have been unable to find the specimen with Linton's others and so consider the record hypothetical. Also, a male was reported at Northwest Harbor 15 Nov 2002. These reports likely pertain to Mountain Bluebirds. Garrett and Dunn (1981) reported two other occurrences of the Western on the Channel Islands, both from Santa Cruz Island.

Blue-winged Warbler (*Vermivora pinus*). One reported in Norton Canyon 5 Oct 2000 was not reviewed by CBRC; the report of two on 15 Apr 1972 was rejected (Rottenborn and Morlan 2000).

Mourning Warbler (*Oporornis philadelphia*).#* One report rejected by the CBRC, of an immature male at Wilson Cove 13 Oct 2003. There are just two Channel Island records, both from San Nicolas Island in September (Jones and Collins unpubl. data).

SPECIES OF EXOTIC ORIGIN

Flamingo (*Phoenicopterus* sp.). One record: an individual not identified to species was seen during a Bald Eagle reintroduction at Mosquito Cove 17 Nov 1976 (DKG).

Diamond Dove (*Geopelia cuneata*). One record: a single bird was seen near the airfield 18 Oct 2003 (AC).

European Goldfinch (*Carduelis carduelis*). One record: a male photographed at Stone Station with Lesser Goldfinches 1 August 2001 (JTB et al.). The species is common as a cage bird.

SPECIES KNOWN ONLY FROM PREHISTORIC REMAINS

Short-tailed Albatross (*Pheobastria albatrus*). Although there are no recent records of this species from SCI, Howell (1917) described it as occurring more frequently than the Black-footed Albatross on the ocean between SCI and San Nicolas Island, Santa Catalina Island, and the mainland. Bones of this species found in the middens of early islanders indicate its former status as a regular visitor around SCI (Porcasi 1999a). Porcasi (1999b) described two large deposits of albatross bones at two sites on SCI, implying that the early maritime hunter-gatherers occupying SCI exploited albatrosses for food. Formerly a common visitor to North American waters, this species was nearly extirpated from its breeding grounds on Torishima in the early 1930s (Palmer 1962). One photograhed near Santa Barbara Island 19 Feb–22 Mar 2002 (Cole and McCaskie 2004) as well as multiple recent records elsewhere off California give hope for this species' return.

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WESTERN FIELD ORNITHOLOGISTS TOURS

CUBA: 4–15 January 2006

Western Field Ornithologists are offering an exclusive, U.S.-led and managed bird-study program that unites exciting birding opportunities with a taste of authentic Cuba. Once the primary destination for U.S. citizens traveling to the Caribbean, Cuba has been nearly off limits for the last 45 years. As the tourist industry grows for those freely visiting from other countries, much of the open land preserved by years of isolation and underdevelopment is rapidly disappearing. You will travel through rarely explored parts of Cuba with a small group of licensed participants (maximum of 14), a WFO ornithologist, Arturo Kirkconnell, the author of *The Birds of Cuba* and a leading Cuban ornithologist, a bilingual Cuban tour leader, and local naturalists. **For an itinerary and other trip information see the WFO website, www.wfo-cbrc.org, or contact Dave Krueper at dkrueper@comcast.net, 105 Mission Ridge Road, Corrales, NM 87048.**

The itinerary is designed in part to allow participants to see the greatest number of endemic species as well as the greatest number of overall species; it has yielded up to 165 total species in past visits. These may include (endemics and endemic subspecies in italics) the *Bare-legged Owl, Black-cowled Oriole, Bee Hummingbird, Blue-headed Quail Dove, Cuban Black Hawk,* Cuban Bullfinch, *Cuban Crow, Cuban Emerald, Cuban Grassquit, Cuban Green Woodpecker,* Cuban Martin, *Cuban Parakeet*, Cuban Parrot, *Cuban Pewee, Cuban Pygmy Owl, Cuban Solitaire, Cuban Tody, Cuban Trogon, Cuban Vireo, Fernandina's Flicker, Cuban Crow, Palm Crow, Giant Kingbird, Oriente Warbler*, *Yellow-headed Warbler, Zapata Wren, Zapata Sparrow, Zapata Rail, Gray-headed Quail Dove,* Key West Quail Dove, Piping Plover, Plain Pigeon, Thick-billed Vireo, and possibly a

BOOK REVIEWS

Shorebirds of North America: the Photographic Guide, by Dennis Paulson. 2005. Princeton University Press. 384 pages, 534 color photos. Paperback, $29.95 (ISBN 0-691-12107-9); hardback, $65.00 (ISBN 0-691-10274-0).

Some shorebirds are the epitome of wilderness—from Arctic tundra to the remote tidal flats of Tierra del Fuego—others, like the Killdeer, may be familiar in urban neighborhoods. All are wild and beautiful creatures, and their spectacular flocking, impressive migrations, and frequent identification challenges are among the reasons that shorebirds are popular with many birders and field ornithologists. This book (hereafter *Shorebirds*) will be welcomed by enthusiasts, but does it hold much for more general readers?

Be aware that this is truly a photographic guide with fairly minimal text, no range maps (omitted "because all current field guides have largely accurate maps"), and an average of 5–6 photos (range 1–16) per species. The attractive layout is similar to that of other books in this series (which originated with Academic Press and was inherited by Princeton), such as hummingbirds and sparrows. The scope is North America in its biogeographic sense, so the Caribbean and Middle America are included (and with them three "extra" species unrecorded in the myopic political entity we often consider as North America); in all, 94 shorebird species are treated.

A 19-page introduction discusses the subject and this book's approach to it, with short sections on anatomy, plumage variation, molt, identification, behavior, vocalizations, distribution, and conservation, plus explanations of the species accounts, photos, and photo captions. The introductory material is well worth reading, although molt is reportedly arrested during migration, rather than suspended, or interrupted (arrested molt is stopped, not to be continued); "eyering" and "orbital ring" are considered synonymous despite the frequent distinction in other works that the former is feathered, the latter bare skin. Measurements given for overall length, bill, and tarsus are simply average values; the failure to provide ranges of values is surprising and detracts from the book's usefulness for identification. The final sentence to the introduction is a plea with which I concur—that photographers label their photos with locality and date. Despite this, photos without date and location were used, as for a juvenile White-rumped Sandpiper, hardly a plumage for which photos with data seem unattainable.

The species texts (only 1–2 pages each) address size (weight, length, bill, and tarsus), plumages (a synopsis of age- and sex-related differences, not including immature plumages past juvenal), identification (criteria for distinguishing similar species), flight (description of salient flight characters), voice (brief description), behavior, habitat, and range (a very general statement). Paulson's writing style is very readable, almost casually and disarmingly distilling a wealth of personal observation and tidbits from someone who has clearly held a long-term passion for shorebirds. The pithy identification discussions and photo captions are particularly good, although sometimes lacking in features one might expect to see mentioned, such as differences in auricular pattern and overall structure between the Pectoral and Sharp-tailed sandpipers.

The photos are generally of good to excellent quality, and well reproduced, but a few images are almost too small to be of use, at least without a magnifying glass, such as photo 74.11, of Rock Sandpipers and other species in flight. A great feature is the inclusion for most species of photos of flying birds; unfortunately, a Long-toed Stint in flight (with its long toe projection beyond the tail tip) was not among photos that could be found. The photos' coverage of variation by age and season is fairly good, with single photos included only for unmistakable species such as the two woodcocks and Double-striped Thick-knee (although this last is unlikely to be the subspecies recorded in North America). For better or worse, the photos are biased toward rarities: witness five photos of the Far-eastern Curlew and only four of the Long-billed Curlew, or

three of Wilson's Snipe and four of the Common Snipe. There are only three of the Buff-breasted Sandpiper, with none of birds in flight.

A notable feature is the use of museum specimens for direct comparisons of upperwing and underwing patterns in some species, such as the for sand-plovers and Spotted vs. Common sandpipers. This valuable approach could have been taken further—there are no such photos for phalarope upperwings, and series of specimens showing variation in the underparts of breeding-plumaged tattlers would have been instructive. I found no photos obviously misidentified with respect to species or age, although I wondered how photo 37.4 was identified to subspecies, given the author's doubt that subspecies of the Willet can be distinguished reliably. And photo 57.3 of a Black Turnstone may not be of a bird in full juvenal plumage, especially given the late date.

Unusually, more thought than work seems to have gone into this book, although much of both have been lifted from Paulson's classic *Shorebirds of the Pacific Northwest*, which treated 78 of the same species in more detail. The format, much of the information, and most photos, are good to excellent, but fact-checking and copy-editing were indifferent or poor. Typos are not rare (e.g., the Little Curlew and Upland Sandpiper are both 27 cm long, yet one is 11", the other 10.5"), and syntax is occasionally comical (e.g., "Dark eyes, dark-tipped bill, and whitish legs characteristic of plumage;" photo 22.2 caption). Text and photos do not always agree—the supposedly diagnostic unmarked breast of Temminck's Stint is not a feature of breeding plumage, as the photos show. Errors in the range statements further suggest that information-gathering was hurried; for example, the Spotted Sandpiper breeds south to southern (not northern) California, as reported (a point acknowledged even in the AOU Checklist), and the Southern Lapwing is reported north only to Costa Rica (cf. Martin, J. P. 1997. The first Southern Lapwing *Vanellus chilensis* in Mexico. *Cotinga* 8:52–53). Furthermore, the Southern Lapwing's taxonomy is not addressed, and the photo from Calafate is of the southern subspecies group that may represent a species distinct from the northern populations that occur in Middle America (cf. Fjeldsa, J., and Krabbe, N. 1990. *Birds of the High Andes*, pp. 159-161. Zool. Mus., Univ. of Copenhagen).

The audience of this book is unclear to me. Some parts seem aimed at relative beginners, others are relatively advanced (although presented in a very accessible style). Beginners are better off with conventional guides such as the Sibley Guide, which is not packed with extraneous rarities and has an excellent and well laid-out treatment of shorebirds. Rarity hunters and chasers may find themselves drooling over photos of species they are unlikely to see—especially if they stay inside reading! Experienced birders and those familiar with Paulson's earlier work will surely enjoy the "refresher course" that reading *Shorebirds* provides, but many will probably be disappointed by the text's brevity and failure to treat such things as molt strategies, migration timings, and commonly encountered ranges of variation in vocalizations (e.g., calls of golden plovers and peeps). I number myself among the last category and view *Shorebirds* as ostensibly a commercial venture and a missed opportunity for a great book—which a little more work could have produced. It's still a good book, but of the sort I'd be happy to receive as a present rather than buy for myself.

Steve N. G. Howell

Introduction to California Birdlife, by Jules Evens and Ian Tait. 2005. University of California Press. xi + 382 pages, 150 color photographs, 4 line illustrations, 7 maps. Softback, $16.95. ISBN 0-520-24254-8.

With more than 600 species of birds and the richest diversity of habitats found in any state, California is a paradise for birds and birdwatchers. This same complexity, however, has posed a daunting, even overwhelming, challenge for writers. Despite the seminal works of Dawson and of Grinnell and Miller, and a more recent contribution by Small, the nature of California birdlife remains largely unaddressed in a present-day context. *Introduction to California Birdlife*, by author and biologist Jules Evens and photographer Ian Tait, is the most recent effort in this distinguished lineage. Part of the *California Natural History Guide Series* published by the University of California Press, this book has the unique distinction of being an introduction to the state's birdlife rather than an exhaustive treatment. While this approach limits the book's usefulness as a reference tool, it makes it an ideal textbook for beginning birdwatchers, newcomers to California, and bird classes.

Arranged very simply, the book consists of eight chapters that start with an overview of California birdlife and then move through the state's seven biogeographic regions. By and large, the delineations of these regions are well considered and intuitive: ocean, shoreline, coast ranges, Central Valley and delta, mountains and foothills, Great Basin, and deserts. Within chapters, topics of special interest as well as subregions are described. In a mere 300 pages the reader is taken on a whirlwind tour of California and comes away richer for the experience. In addition, the book is expertly illustrated by a series of 150 marvelous photographs by Ian Tait, whose work must be commended for its ability to capture the spirit and personality of its subjects.

This book covers a vast area and provides innumerable facts and numbers about California birds. It is rich with examples and stories that could be described as "snapshots" of California's birdlife. Some readers may find these useful as learning or teaching tools, especially because so many are included in this slim volume.

Introduction to California Birdlife has some weaknesses, however, that limit its potential. In particular, it has a hurried and scattershot feel that sometimes makes for a less-than-pleasant read. For example, to make its points, the book often relies on lists within the text. On a random sample page from the introduction, there is a list of seven counties in one paragraph, a list of 18 unique topographic features in the next, a list of seven birding hotspots in the next paragraph, a list of 15 familiar birds in the next, a list of eight birds with limited distributions in the next, etc. Then, page after page reads like this sample from page 196: "American Kestrel (*Falco sparverius*), Loggerhead Shrike (*Lanius ludovicianus*), and Western Kingbird (*Tyrannus verticalis*) perch on fence posts and wires and forage over open fields; Red-shouldered Hawks (*Buteo lineatus*) and Black Phoebe (*Sayornis nigricans*) stay close to riparian corridors. In winter, Sharp-shinned Hawk (*Accipiter striatus*) and Cooper's Hawk (*Accipiter cooperi*) are as likely in the foothills as anywhere, except perhaps the Coast Ranges. In the less peopled regions, where open pasture is extensive enough for jackrabbits, Golden Eagles (*Aquila chrysaetos*) still range. Barn Owl (*Tyto alba*) is common, but seldom seen; the lower foothills may be a last stronghold outside the Imperial Valley for Burrowing Owl (*Athene cunicularia*), but even here it is getting exceedingly scarce." After a while the reader's mind can be excused from going numb with these bombardments of facts. If nothing else, omission of the distracting scientific names would have helped, since these appear in a complete checklist of California birds after the main chapters.

The real shame is that when applied at the chapter level, this scattershot approach begins to dilute the book's effectiveness. For example, the lead chapter on "Seabirds and the Marine Environment" (easily the strongest chapter) moves gracefully between subsections on California's marine environment, taxonomic groups, biogeography of seabirds, seabird communities, seabird nesting sites, seabird habitats at sea, seabird

behavior and ecology, and conservation. But the concluding chapter, "The Desert's Birds," wanders off into subsections on the physical environment, Mojave Desert, mountains of the deserts, Colorado Desert, Salton Sea and Imperial Valley, and Colorado River Valley, with no subsections on biogeography, bird communities, or behavior and ecology. There's a lot of great information here but it's presented in such a jumbled barrage that readers may not remember much of what they read, and it's nearly impossible to compare chapters (i.e., regions) and answer parallel questions.

The structure of the desert chapter further highlights the book's greatest weakness—its over-reliance on a regional breakdown. In fact, so much text is devoted to regional (and subregional) descriptions and coverage that many other factors affecting California birds are overlooked or given short shrift. The fifth sentence in the introduction states that "California lies at an intersection of atmospheric and oceanic currents and, therefore, at the crossroads of migratory bird routes of the Western Hemisphere." Yet these concepts are scarcely explored. Little or no mention is made of how California's unique Mediterranean climate or the barrier of the Sierra Nevada affects California birdlife, for example. This would have been especially appropriate in the section on "Endemics and Near Endemics," as a way of explaining why certain birds favor California. Another example would be the section on "Accidentals," which lists eight favorite birding hotspots but doesn't mention causes of vagrancy in birds or theories about why so many end up in California. The book could have been much improved by streamlining the nearly 100 pages of back matter (a species checklist, glossary, bibliography, and two indexes, which combined make up 25% of the book!) and using those pages to explore the subject matter in greater depth.

A final weakness of this book is that it does not look back, or forward. It would have been helpful to discuss in the introduction the strengths, weaknesses, and coverage of other books that survey birds and birdlife of the state. Dawson, Grinnell and Miller, and Hoffmann are quoted regularly but never given any context, and no history of California ornithology or birdwatching is offered. The introduction covers critical habitat components, endemics, accidentals, and expatriates but does not mention trends or future directions, despite the state's burgeoning human population and its tremendous impact on native habitats.

Despite these qualms, there is nowhere else so much information about California birdlife is crammed into such a small package and, for this reason alone, *Introduction to California Birdlife* is deservedly bound to become the definitive new textbook on California's birds. There is a lot that even a seasoned birder could learn from this book. But the daunting challenge of writing the first definitive book on California birds still lies unanswered—are there any writers or publishers out there willing to tackle this magnificent task?

David Lukas

FEATURED PHOTO

AN APPARENT HYBRID BETWEEN HOODED MERGANSER AND BARROW'S GOLDENEYE AT LAKE MERRITT, OAKLAND, CALIFORNIA

JOSEPH MORLAN, 1359 Solano Dr., Pacifica, California 94044

Hybridization in birds usually occurs between closely related species within the same genus. Intergeneric hybrids are of particular interest because they may be evidence of a close relationship between two genera. Originally described in the genus *Mergus*, the Hooded Merganser (*L. cucullatus*) was segregated in the genus *Lophodytes* in 1853, and the American Ornithologists' Union has maintained it in that genus through all seven editions of its checklist. Delacour and Mayr (1945), however, lumped *Lophodytes* back into *Mergus*, and some authors, such as Johnsgard (1975, 1979), have followed this classification. In some respects the Hooded Merganser is intermediate between *Bucephala* and *Mergus* (Johnsgard 1961, Dugger et al. 1994). In his studies of waterfowl morphology and relationships, Livezey (1986, 1995, 1997) maintained the genus *Lophodytes*. He found the Hooded Merganser to represent an early branch of the mergansers, lying outside a cluster including the Common (*M. merganser*) and Red-breasted (*M. serrator*) mergansers and just above the branch leading to the genera *Bucephala* and *Mergellus*.

I report here an apparent natural intergeneric hybrid between the Hooded Merganser and Barrow's Goldeneye (*B. islandica*). This hybrid combination has not been described previously (Gillham and Gillham 1996, 2002). Hybridization between the Hooded Merganser and Common Goldeneye (*B. clangula*) is well known, and there have been reports of hybrids between the Hooded Merganser and a goldeneye where the parental species of goldeneye was unknown. One of the parents of some of these previously undetermined hybrids could have been Barrow's Goldeneyes (Gillham and Gillham 1996).

In the wild, the Hooded Merganser has hybridized with the Wood Duck (*Aix sponsa*), Common Goldeneye, Red-breasted Merganser, and Bufflehead (*B. albeola*) (Russell 1978, Cockrum 1952, Dugger et al. 1994, Gray 1958, Gochfeld 1976, Johnsgard 1960, Sibley 1994, Millard 1994, Gillham and Gillham 1996, Jorgensen 1997, Erickson 1952, Marcisz 1981). In captivity it has also hybridized with the Redhead (*Aythya americana*), Smew (*Mergellus albellus*), and Common Merganser (Gray 1958, Gillham and Gillham 1996, Johnsgard 1960). Sibley's (1994) report of a hybrid between a Gadwall (*Anas strepera*) and a Hooded Merganser appears to have been an error (D. A. Sibley pers. comm.).

In the wild, the Barrow's Goldeneye has previously been known to hybridize only with the Common Goldeneye (Eadie et al. 1995, 2000, Snyder 1953, Gray 1958, Jackson 1959, Johnsgard 1960, Martin and Di Labio1991, 1994a, b, Nelson 1993, Sibley 1994, Gillham and Gillham 1996). In captivity, however, hybrids have been reported with the Spectacled Duck [*Anas* (*Speculanas*) *specularis*] and Bufflehead (Scherer and Hilsberg 1982, Gillham and Gillham 1996).

On 15 March 2004, Bob Battigan found and photographed (middle photo on back cover) an immature male diving duck at Lake Merritt that he identified as a Hooded Merganser × goldeneye. The bird was seen and photographed (photo posted at www.petrels.com/duck1.htm) the next day by Rich Stallcup and Deborah Fitzpatrick (Terrill et al. 2004). Note that, except for the bill shape, this bird looks very similar to an immature male Hooded Merganser and would be easy to overlook.

On 8 January 2005, at Lake Merritt, Ron Thompson reported an "interesting bird that seems to be a hybrid between a Hooded Merganser and Barrow's Golden-

eye." This bird was described independently on 12 January 2005 by Travis Hails, who noted it displaying to, and head-bobbing with, a male Barrow's Goldeneye. On 19 January, Steve Look obtained photos (posted at http://home.earthlink.net/~chamaea/20050119.htm), and on 22 January, I observed the bird and obtained photos (posted at http://community.webshots.com/album/257396144ThUYje) (Terrill et al. 2005). On 23 January, Joyce Gross obtained a superb set of photos (posted at http://hyla.cs.berkeley.edu/hybrid/) showing the bird devouring mussels. One of the images from her series is the top photo on the back cover of this issue.

This bird continued to be seen and photographed through 27 February (Mast 2005, Terrill et al. 2005). Because of the rarity of this hybrid combination, the immature male seen in 2004 is likely the same individual returning to this location as an adult in 2005. It associated with a mixed flock of both goldeneye species and may have migrated with them.

Given the appearance of this individual, it seems certain that one parent was a Hooded Merganser. There has been a strong consensus among waterfowl experts and others who have examined the photos that the other parent was a Barrow's Goldeneye. It shows some features found on known hybrid Hooded Merganser × Common Goldeneyes including a fairly long narrow black bill with a broad base, vermiculated dark sides, dark head, and fairly obvious crest. Features that support the identification of one parent as a Barrow's Goldeneye include the dark scapulars with well-defined white "piano key" markings, strong purple iridescent head sheen when seen in good light, and a steeply angled forehead in most views. I compared our bird with photos of presumed Hooded Merganser × Common Goldeneyes and found that our bird differed consistently from them in these characters. For comparison, an example of a Hooded Merganser × Common Goldeneye appears as the bottom bird on our back cover. It was photographed at Lake Ogalalla, Nebraska, on 31 December 2004 by Bill Schmoker. Note the obvious green sheen to the head, more extensively white scapulars, and lack of a forward shoulder stripe on this bird.

Hybrids between the Hooded Merganser and Common Goldeneye vary considerably. One fairly common variant shows a white patch on the side of the head. Although identity of the Oakland hybrid is tentative, its being a Hooded Merganser × Barrow's Goldeneye is strongly supported not only by the bird's appearance but by its behavior in displaying to male Barrow's Goldeneyes. Furthermore, this hybrid combination is not unexpected given the breeding biology of cavity-nesting ducks (see below).

A plausible mechanism for this type of hybridization is interspecific brood parasitism (egg-dumping) by females of one species into the nests of other cavity-nesting species. Barrow's Goldeneyes parasitize, and are parasitized by, Common Goldeneyes, Buffleheads, Hooded Mergansers, Wood Ducks, and Red-breasted Mergansers (Palmer 1976, Eadie et al. 2000). Hooded Mergansers parasitize, and are parasitized by, Common and Barrow's goldeneyes, Common Mergansers, and Wood Ducks. Hooded Mergansers normally reject goldeneye eggs from their nests, but goldeneyes apparently accept Hooded Merganser eggs (Dugger et al. 1994, Eadie et al. 2000). Thus it is more likely that a Hooded Merganser chick would be raised by a goldeneye than the reverse. When this happens, the foster chick may imprint on its adoptive parent.

An interesting example of this type of interspecific imprinting occurred a few years ago when a male Hooded Merganser, wintering on Lost Lagoon in downtown Vancouver, British Columbia, ignored the other Hooded Mergansers on the lagoon, consorting only with a flock of Barrow's Goldeneyes. Throughout the season, this bird displayed to a female Barrow's Goldeneye, behavior that might be expected of a bird that had been raised by Barrow's Goldeneyes (Michael Price pers. comm.).

Most previously documented natural hybrids of the Hooded Merganser or Barrow's Goldeneye involve the same species pairs involved in known mixed clutches. The exception is Hooded Merganser × Barrow's Goldeneye, which has known mixed

clutches but no previously documented natural hybrids. Thus this hybrid combination was expected.

Studies of the diet of the Hooded Merganser have found that it normally eats fish, with shellfish forming less than 5% of the diet. Compared to other mergansers, however, this species has an unusually thick-walled gizzard, allowing it to eat more hard-shelled invertebrates such as crayfish (Dugger et al. 1994). The diet of Barrow's Goldeneye is quite different with mollusks, notably blue mussels and periwinkles, particularly important during winter (Eadie et al. 2000). Thus the observed diet of the Lake Merritt hybrid was more like that expected of a Barrow's Goldeneye than of a Hooded Merganser, although its bill structure was close to that of a Hooded Merganser.

Reports of hybrids between the Hooded Merganser and Common Goldeneye are increasing, and such hybrids now appear annually in the Great Lakes region (John Idzikowski in litt.). Hybrids between the Hooded Merganser and goldeneyes are far more frequent than hybrids between the Hooded Merganser and other mergansers. Thus the Hooded Merganser's current placement in a genus other than *Mergus* seems warranted.

Michael Price reviewed an early version of this note and provided helpful suggestions. I thank Joyce Gross, Bob Battigan, and Bill Schmoker, who generously supplied the featured photos on the back cover of this issue. I thank the following people who offered opinions or helped research the identity of the Oakland hybrid: Travis Hails, Laura Look, John Idzikowski, Bruce Deuel, Steve Owdom, Mike Rogers, Gary W. Potter, Glen Tepke, Barry Kent MacKay, Robert Hughes, Bob Power, Robert Lewis, and many others who participated in discussions on this intriguing individual.

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Back cover "Featured Photos" by © Joyce Gross of San Leandro, California: presumed Hooded Merganser × Barrow's Goldeneye (*Lophodytes cucullatus* × *Bucephala islandica*), Oakland, California, 23 January 2005 (top); © Bob Battagin of Oakland, California: presumed Hooded Merganser × Barrow's Goldeneye (*L.cucullatus* × *B. islandica*) Oakland, California, 15 March 2004 (middle); and © Bill Schmoker of Longmont, Colorado: presumed Hooded Merganser × Common Goldeneye (*L. cucullatus* × *B. clangula*), Lake Ogalalla, Nebraska, 31 December 2004 (bottom).

WESTERN BIRDS

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Front cover photo by © Herbert Clarke of Los Angeles, California: Common Black-Hawk (*Buteogallus anthracinus*), Stockton, California, 28 January 2005.

Western Specialty:
Wrentit

Photo by © Robert Royse of Columbus, Ohio:
Wrentit (*Chamaea fasciata henshawi*)
Cleveland National Forest, San Diego County, California, March 2005.

WESTERN BIRDS

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BREEDING ECOLOGY OF THE GRAY FLYCATCHER IN PINYON–JUNIPER WOODLANDS IN NEW MEXICO

CHRISTOPHER B. GOGUEN, School of Forest Resources, Penn State University, 405 Forest Resources Bldg., University Park, Pennsylvania 16802; e-mail: cbg10@psu.edu

DAVID R. CURSON, Audubon Maryland–DC, 2437 Eastern Ave., Baltimore, Maryland 21224

NANCY E. MATHEWS, Nelson Institute for Environmental Studies, University of Wisconsin, 70 Science Hall, Madison, Wisconsin 53706

ABSTRACT: We studied the breeding ecology of the Gray Flycatcher as part of a long-term study of bird communities of pinyon–juniper in northeastern New Mexico, 1992–2002. All years combined, we located and monitored 37 nests and measured vegetation and habitat characteristics at most nests. Clutch-initiation dates ranged from 12 May through 14 July with a peak from late May to early June. Mean clutch size was 3.65 eggs but was significantly lower in later nests than in early nests. Mayfield nest success was 31% with most (93%) unsuccessful nests failing because of predation. Only one nest (3%) was parasitized by a cowbird. Nest height averaged 2.32 m with most nests placed close to or against the main trunk within the middle portion of a tree. Positioning the nest close to the trunk increases nest concealment and may represent a strategy to avoid predation. Gray Flycatchers nested primarily in pinyon pines (*Pinus edulis*; 62% of nests) and junipers (*Juniperus* spp.; 35%). On average, the flycatchers built nests in areas with taller and denser canopies, steeper slopes, and higher densities of trees, especially junipers.

The Gray Flycatcher (*Empidonax wrightii*) is a small (~12.5 g) migratory songbird that breeds through much of the interior western United States and winters primarily in Mexico (Sterling 1999). It nests in a wide variety of arid habitats ranging from taller sagebrush (*Artemisia* spp.) shrublands to open pinyon pine (*Pinus edulis*)–juniper (*Juniperus* spp.) woodlands to mature ponderosa pine (*Pinus ponderosa*) forests (Sterling 1999). Its population density varies substantially by habitat and location but tends to be greatest in shrubland habitats, particularly on the Columbia Plateau, and lower in woodland or forested habitats (Sterling 1999). Unlike many other migratory songbirds, the Gray Flycatcher does not appear to be suffering declines in

abundance but rather is increasing over much of its range (Peterjohn et al. 1995) and expanding its distribution (Sterling 1999).

Despite the Gray Flycatcher's abundance and broad distribution, surprisingly little is known about many aspects of its natural history. For example, although a few published studies have described the species' nesting behavior and nest sites (Russell and Woodbury 1941, Johnson 1963, Yaich and Larrison 1973), most have been based on observations of only one or a few nests. In addition, there have been no detailed studies of the reproductive success of any Gray Flycatcher population (Sterling 1999). We studied the breeding ecology of Gray Flycatchers nesting within pinyon–juniper woodlands in northeastern New Mexico. The objective of this paper is to describe the nesting success, causes of nest failure, nest sites, and nesting habitat of this population.

METHODS

Study Site

Our study took place in Colfax County, northeastern New Mexico, along the eastern edge of the foothills of the Sangre de Cristo Mountains at the western edge of the Great Plains. It was part of a long-term research program studying the behavior of the Brown-headed Cowbird (*Molothrus ater*) and its effects on hosts nesting in pinyon–juniper woodlands. During these studies, we established 14 study plots of 35 ha each within pinyon–juniper woodlands distributed among four adjacent properties, and we studied the breeding-bird communities on a subset of plots each year from 1992 to 2002 (NRA Whittington Center, 4 plots, 1992–2000; V-7 Ranch, 4 plots, 1992–1997; CS Ranch, 2 plots, 2001; Vermejo Park Ranch, 4 plots, 2001–2002). All properties are largely undeveloped, but two were grazed seasonally by cattle (V-7 Ranch, CS Ranch), one was grazed by American bison (*Bison bison*; Vermejo Park Ranch), and one was ungrazed by domestic livestock or bison (NRA Whittington Center); see Goguen and Mathews (1998) and Goguen et al. (2005) for detailed descriptions of these sites.

Although distributed among four properties, all study plots were located within 50 km of each other and were similar in habitat structure and topography. In our study region, pinyon–juniper habitat occupies a narrow elevational zone (~1990–2130 m) between shortgrass prairie and mixed-conifer forests of ponderosa pine and Douglas fir (*Pseudotsuga menziesii*). All plots were covered by an open woodland dominated by pinyon, with one-seed juniper (*Juniperus monosperma*) scattered throughout. The shrub layer consisted primarily of oaks (*Quercus* spp.), alder-leaf mountain mahogany (*Cercocarpus montanus*), and skunkbrush sumac (*Rhus aromatica*). The herbaceous layer was generally sparse.

Over 40 bird species breed in the pinyon–juniper woodlands of this region (Goguen and Mathews 1998). Among the most common breeding species are the Spotted Towhee (*Pipilo maculatus*), Chipping Sparrow (*Spizella passerina*), Bushtit (*Psaltriparus minimus*), Blue-gray Gnatcatcher (*Polioptila caerulea*), Western Wood-Pewee (*Contopus sordidulus*), and Western Scrub-Jay (*Aphelocoma californica*). The Brown-headed Cowbird is also

common and parasitizes several species heavily (Goguen and Mathews 1998). The Gray Flycatcher is a regular breeder at low densities (typically <2 pairs/35 ha plot).

Nesting Success

We located and monitored Gray Flycatcher nests on a subset of study plots from May through July each year while searching broadly for nests of any cowbird hosts. We located nests by observing adults' behavior and revisited nests every 2 or 3 days to monitor the nests' fate and contents. For all nests, we estimated the date of clutch initiation from direct observation or by back-calculation from hatching or fledging dates. To calculate average clutch size, we used only nests that were checked during the incubation stage to ensure that clutches were complete. To estimate the parasitism rate, we used only nests that survived through the egg-laying stage to ensure that each nest was available to be parasitized for at least the entire egg-laying period.

We calculated nesting success by the Mayfield method (Mayfield 1961, 1975). We considered a nest successful if it fledged at least one young flycatcher. We considered a nest to have failed because of cowbird parasitism if it was abandoned within three days of the appearance of a cowbird egg. In calculations, we used published estimates of the Gray Flycatcher's incubation (14 days) and nestling periods (16 days; Sterling 1999), as these agreed with our observations. Because clutch size varied from nest to nest, we used the mean clutch size observed in our study to estimate the average length of the egg-laying period (period between the laying of the first and last egg).

Nest Site and Habitat Characteristics

After nests were no longer active, we measured habitat characteristics at most nests by a protocol modified from James and Shugart (1970). At each nest, we used a measuring tape or clinometer to measure nest height, height and diameter at breast height (dbh) of the nest tree, distance of the nest from the main tree trunk, and distance of the nest from the outer foliage edge. We used a compass to determine the orientation of the nest relative to the trunk. We measured canopy cover with a spherical densiometer by averaging four measurements taken 1 m from the nest in the four cardinal directions. We estimated the proportion of the nest concealed by foliage from 1 m above the nest and from 1 m in each of the four cardinal directions at the level of the nest. Within a subplot of radius 5 m (0.008 ha) centered on the nest, we counted shrubs and saplings (all woody plants <8 cm dbh), and we determined slope and the average height of the canopy. Within a subplot of radius 11.3 m (0.04 ha) centered on the nest, we counted trees (all woody plants >8 cm dbh), by species.

To evaluate whether nests were oriented nonrandomly, we assigned each nest to one of six sectors (60° each) according to its orientation and used a Pearson chi-squared test to evaluate whether the nests' distribution by sector differed from even.

To evaluate whether Gray Flycatchers were selecting specific microhabitats within pinyon–juniper woodlands, we compared characteristics of nest sites on the four study plots on the V-7 Ranch to similar measurements made

systematically within these four plots. We limited these comparisons to this single property because plot-level habitat measurements were available for only two properties (NRA Whittington Center and V-7 Ranch), and 23 of 24 flycatcher nests found on these two properties were on the V-7 Ranch. We quantified the habitat on each plot on the V-7 Ranch in 1992 in order to describe the pinyon–juniper woodland for a related study (see Goguen and Mathews 1998). Within a given plot, we sampled the habitat in a manner similar to that used at nest sites, centering on 12 bird-survey points arranged systematically within the plot in a 3 × 4 grid, with points separated by 200 m. We used ANOVA to compare the means of seven variables (slope; overstory canopy height; canopy cover; total number of shrubs and saplings per 0.008 ha; total number of pinyon, juniper, and all trees per 0.04 ha) at the flycatcher nest sites with those at the systematically located points representing potential flycatcher nesting habitat. Although plot-level habitat measurements were made during only one year (1992) whereas nest measurements were spread over six years (1992–1997), we believe that the habitat variables we were comparing were unlikely to change significantly over this relatively brief period in this arid habitat. Three systematically located points that were in prairie (no trees) did not represent potential Gray Flycatcher nesting habitat and were removed prior to analyses. Percent canopy cover was arcsine-square-root transformed prior to being tested to approximate normality (Sokal and Rohlf 1981). All analyses were carried out with SYSTAT, version 10 (Systat Software, Inc.).

RESULTS

Nesting Success

We located and monitored 37 nests over the 11 years of the study. The number of flycatcher nests located annually varied from 0 to 12, but in most years (9 of 11) we located between 1 and 6 nests. Although we tried to locate nests as early in the nesting cycle as possible, only 13 (35%) were found during the nest-building or egg-laying stages, whereas 10 (27%) and 14 (38%) were found during the incubation and nestling stages, respectively. Because so few nests were found each year we did not attempt to analyze data by year but instead combined nests from all years for analyses.

Clutch-initiation dates ranged from 12 May through 14 July with a peak in initiations from the last week of May to the first week of June (Figure 1). Although the birds were not banded, the proximity of some of the later nests to recently failed nests (<100 m) suggests they were replacement nests. We were unable to determine if any later attempts were second broods of previously successful pairs.

Mean clutch size was 3.65 eggs (n = 17; standard error 0.15). Four-egg clutches were most frequent (12 nests; 71%), but three-egg (4 nests, 24%) and two-egg (2 nests, 6%) clutches were also observed, particularly later in the season. Nests initiated in the first half of the breeding season (before June 9) averaged 3.9 eggs (n = 10), while later nests averaged 3.3 eggs (n = 7; Mann–Whitney U test: U = 52.00, P = 0.04).

Of 33 nests whose fates we confirmed, 19 (58%) were successful, 13

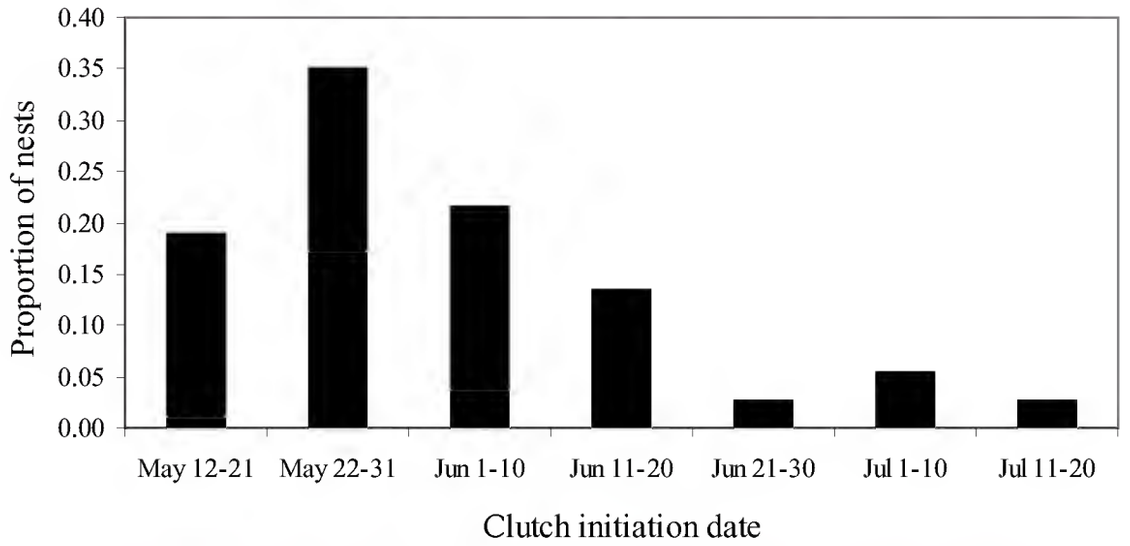

Figure 1. Seasonal distribution of clutch-initiation dates for Gray Flycatcher nests (n = 37) in pinyon–juniper woodland in northeastern New Mexico, 1992–2002.

(39%) failed because of predation, and 1 (3.0%) failed because of cowbird parasitism. Mayfield nest success (30.7%) was substantially lower than the observed proportion successful (57.6%) because of the large number of nests located during the incubation and nestling stages (Table 1).

On the basis of nests for which the number of fledglings was known, Gray Flycatchers fledged an average of 1.78 young per nesting attempt (n = 32 attempts) but an average of 3.17 young per attempt when only successful nests (n = 18) were considered. In the one parasitized nest a single cowbird egg was laid during the flycatcher's egg-laying period, and this nest was deserted within two days.

Nest Site and Habitat Characteristics

Gray Flycatchers nested primarily in pinyon (23 of 37 nests, 62%) but also used one-seed juniper (12 nests, 32%), Rocky Mountain juniper (*Juniperus*

Table 1 Nest Success Calculated by the Mayfield Method for Gray Flycatchers Nesting in Pinyon–Juniper Woodlands in Northeastern New Mexico, 1992–2002

Phase of nesting interval	Phase duration (days)	Exposure (days)	Nests failed (n)	Daily survival (mean, SE[a])	Phase survival (mean, SE)
Egg-laying	2.67[b]	21	1	0.952 (0.046)	0.878 (0.11)
Incubation	14.0	163	7	0.957 (0.016)	0.541 (0.13)
Nestling	16.0	223.5	6	0.973 (0.013)	0.647 (0.12)
Overall nest survival				0.307 (0.098)	

[a]SE, standard error.

[b]Duration of the egg-laying stage was calculated from the mean clutch size observed in this study (3.67) minus 1 day since the egg-laying stage consists of the interval from the laying of the first egg to the laying of the final egg in a clutch.

Table 2 Characteristics of Gray Flycatcher Nest Sites in Pinyon–Juniper Woodlands of Northeastern New Mexico, 1992–2002

Nest-site characteristic[a]	Mean (SE)	Minimum	Maximum	*n*
Nest height (m)	2.32 (0.18)	0.60	6.10	37
Nest-tree height (m)	5.58 (0.36)	2.70	13.50	36
Relative nest height	0.44 (0.026)	0.12	0.84	36
Nest-tree diameter[b] (cm)	18.9 (1.7)	6.5	48.0	34
Nest distance from trunk (cm)	28.6 (8.3)	0.0	175.0	35
Nest distance from tree's outer edge (cm)	75.1 (9.1)	0.0	200.0	28
Relative distance from trunk	0.17 (0.04)	0.0	0.78	34
Concealment from 1 m above (%)	63.3 (5.68)	0.0	100.0	27
Concealment from sides (%)	64.9 (4.48)	11.3	91.3	26
Nest-patch characteristic				
Slope (degrees)	16.1 (1.2)	5.0	32.0	34
Canopy height (m)	6.3 (0.3)	3.5	13.0	34
Canopy cover (%)	69.4 (3.76)	36.7	95.8	24
Shrubs/0.008 ha (*n*)	51.3 (12.4)	1	367	34
Trees/0.04 ha (*n*)	24.4 (2.0)	6	70	34
Pinyons/0.04 ha (*n*)	18.7 (1.8)	3	57	34
Junipers/0.04 ha (*n*)	5.5 (0.8)	0	14	34
Ponderosa pines/0.04 ha (*n*)	0.2 (0.2)	0	534	

[a]See Methods for a more complete description.

[b]At breast height (dbh).

scoparum; 1 nest), and ponderosa pine (1 nest). In all cases, nests were placed in live trees. In general, flycatcher nests were compact, well-hidden, and placed close to or against the main trunk within the middle portion of the tree (results summarized in Table 2). Nest height averaged 2.32 m with the majority of nests (76%) located between 2 and 4 m in height. Nest heights were distributed approximately normally in relation to the height of the nest tree, with most nests (61%) located between 40 and 60% of the height of the nest tree. Nest placement within the foliage, however, was highly skewed towards the trunk; 60% of nests were built against the main trunk. Nest orientation relative to the trunk was non-random (χ^2 =11.55, 5 df, P = 0.04); 24 of 33 nests (74%) were oriented to either the north or east (between 316° and 135°).

Within the pinyon–juniper woodland of the V-7 Ranch, Gray Flycatchers selected specific microhabitats. They built nests in areas with taller and denser canopies, steeper slopes, and higher densities of trees, particularly junipers, than at points located systematically (Table 3).

DISCUSSION

In northeastern New Mexico, Gray Flycatchers typically initiated their first nesting attempts in late May or early June, with some clutches initiated as early as mid-May. Although the earliest nests in our population include the earliest initiation dates observed in this species to date, the date of peak egg-

Table 3 Comparison of Habitat at Gray Flycatcher Nest Sites and at Points Located Systematically

Habitat variable	Nest sites[a] (mean, SE)	Systematic points[b] (mean, SE)	F[c]	*P*
Canopy height (m)	5.95 (0.26)	4.93 (0.33)	4.30	0.042
Slope (degrees)	17.28 (1.34)	11.84 (1.28)	7.11	0.010
Canopy cover (%)	68.82 (3.89)	39.60 (5.14)	14.30	<0.001
Shrubs/0.008 ha (n)	31.83 (6.98)	54.36 (8.30)	3.16	0.080
Pinyons/0.04 ha (n)	19.30 (2.55)	16.84 (1.45)	0.82	0.37
Junipers/0.04 ha (n)	5.83 (0.98)	1.68 (0.44)	19.93	<0.001
Total trees/0.04 ha (n)	25.13 (2.86)	18.53 (1.49)	5.13	0.027

[a]n = 23.

[b]n = 45. Points within four study plots of 35 ha each in pinyon–juniper woodland on the V7 Ranch, northeastern New Mexico, 1992–1997.

[c]Test statistic from ANOVA with 1, 66 degrees of freedom for all variables.

laying conforms closely with the timing of nesting at other locations throughout the range (Sterling 1999). For example, in Colorado Sedgwick (1998) reported that first broods hatched during mid-June, which would correspond to egg-laying in late May or early June. The Gray Flycatcher rears two broods in some locations (Russell and Woodbury 1941, Johnson 1963), and the length of the breeding season in our study region appears to allow time for pairs successful in their first nesting attempt to attempt a second brood. We were unable to confirm any instances of double-brooding, however, and the approximately unimodal distribution of clutch-initiation dates suggests that if double-brooding does occur, it is not particularly common.

Clutches consisted primarily of either three or four eggs, as reported previously (Sterling 1999). The ratio of three- to four-egg clutches, however, was not consistent through the season. Most early clutches contained four eggs, while many later nests contained three or, in one case, two eggs, resulting in a decline in the average clutch size across the season. This pattern has also been observed in other species of *Empidonax* such as the Dusky Flycatcher (*E. oberholseri*; Sedgwick 1993), Willow Flycatcher (*E. traillii*; McCabe 1991), and Acadian Flycatcher (*E. virescens*; Wilson and Cooper 1998), perhaps because the energetic demands of multiple nesting attempts or seasonal patterns of food availability constrain the females to lay fewer eggs.

The Mayfield success of Gray Flycatchers in our study area (30.7%) appears to be slightly low in comparison to other songbirds building open cup nests in trees (Martin 1992), although a larger sample of nests found early in the nesting cycle is probably needed for a more accurate assessment. Predation was the primary cause of nest failure for Gray Flycatchers, as it is for most species building open cup nests (Martin 1988). Thirteen of 14 nests that failed in this study failed because of predation. Although we did not identify the predators, the primary predators of tree-nesting songbirds in this habitat include the Western Scrub Jay, Steller's Jay (*Cyanocitta stelleri*),

Pinyon Jay (*Gymnorhinus cyanocephalus*), Rock Squirrel (*Spermophilus variegatus*), and Pinyon Mouse (*Peromyscus truei*). Although there are few records of cowbird parasitism of the Gray Flycatcher nests, Friedmann et al. (1977) reported the flycatcher to be moderately parasitized (25%) in Oregon. At our site, cowbirds are abundant and parasitize several species heavily, for example, >50% of nests of the Blue-gray Gnatcatcher, Plumbeous Vireo (*Vireo plumbeus*), and Western Tanager (*Piranga ludoviciana*) (Goguen and Mathews 1998, Goguen et al. 2005), but the Gray Flycatcher appears to be an unimportant host.

Gray Flycatchers tended to place their nests in the middle portion of a tree, both vertically and horizontally. The average nest height we observed (2.3 m) is comparable to that reported from pinyon–juniper woodlands in Arizona (0.6–3.4 m; T. Corman in Sterling 1999) and Jeffrey pine (*Pinus jeffreyi*) forest in California (2.7 m; Johnson 1963) but is substantially lower than that reported from a ponderosa pine forest in California (5.4 m; L. George in Sterling 1999). Gray Flycatchers appear to favor placing nests in the inner portion of a tree near the trunk regardless of habitat type: flycatcher nests were placed at the base of a branch against the trunk in 59.5% of nests in a Jeffrey pine forest (Johnson 1963) and in 64.7% of nests in a ponderosa pine forest (L. George in Sterling 1999), proportions similar to that observed in our study (60%). Positioning the nest close to the stem may increase nest concealment and act as a predator-defense strategy.

As >90% of trees in our study area are pinyons (Goguen and Mathews 1998), it is unsurprising that we found Gray Flycatchers nesting primarily (62% of nests) in pinyons,. Nevertheless, Gray Flycatchers apparently prefer juniper trees: given the dominance of pinyon, flycatchers nested more frequently in junipers (35% of nests) than expected, and they favored habitats with a higher density of junipers (Table 3). Although further study is needed, juniper may be favored because its foliage structure provides high-quality nesting or foraging sites. Strips of juniper bark also appear to be a favored component in the outer structure of Gray Flycatcher nests (Russell and Woodbury 1941).

In addition to a preference for juniper, Gray Flycatcher nests in our study were associated with taller trees, denser overstory cover, steeper slopes, and higher tree densities. The association of flycatchers with these features probably results from the flycatchers' preference for mature pinyon–juniper woodland (Pavlacky and Anderson 2001) and the effect of elevation on that woodland's structure in our region. Pinyon–juniper habitat in our study area tends to be shorter and more open (i.e., lower tree density) at lower elevations at or near the edge of the prairie than at higher elevations away from the edge. Flycatchers were generally not found in these flatter, open habitats but instead favored the denser, taller woodlands on steeper slopes at higher elevations. Given that the Gray Flycatcher is a pinyon–juniper specialist in a large part of its range (Balda and Masters 1980), additional research examining the breeding ecology of this species in pinyon–juniper woodlands would be beneficial. Particularly beneficial would be studies that can also address the effects of land uses that promote early successional stages, such as timber or firewood harvesting and clearing or chaining for livestock grazing.

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Gray Flycatcher

Sketch by George C. West

FIRST RECORD OF THE KELP GULL AND SIGNIFICANT RECORDS OF THE GLAUCOUS-WINGED AND LAUGHING GULLS FOR THE CENTRAL PACIFIC

MARK J. RAUZON, 4701 Edgewood Ave. Oakland, California 94602; mjrauz@aol.com

H. LEE JONES, 4810 Park Newport, #317, Newport Beach, California 92660; hleejones@adelphia.net

ABSTRACT: We report three species of gulls on islands in the mid-Pacific Ocean from 1999 to 2004, including the first Pacific Ocean record of the Kelp Gull (*Larus dominicanus*) north of the equator, a new southernmost record for the Glaucous-winged Gull (*L. glaucescens*) on Christmas Island, and Laughing Gulls (*L. atricilla*) from Wake Atoll, with additional recent sightings and historical records from other atolls.

Gulls generally do not thrive in tropical pelagic ocean environments. They typically forage along the continental shelf from subpolar to subtropical waters. Several species, however, such as the Lava Gull (*Larus fuliginosus*) of the Galapagos, are adapted to specific tropical feeding niches, and gulls have been noted in the fossil record from the Society Islands (Steadman 2002) and the Hawaiian Islands (Burney et al. 2001). Some gulls do occur regularly as vagrants on the islands of the central and south Pacific; for example, the Ring-billed (*L. delawarensis*) and Franklin's (*L. pipixcan*) are recorded annually in the Hawaiian Archipelago and less frequently elsewhere in the Pacific. We report here on significant range extensions for two more commonly recorded vagrant gulls and a species expanding its worldwide range.

KELP GULL (*Larus dominicanus*)

On 9 September 1999 Jones observed an adult Kelp Gull standing in shallow water in the lagoon at the main village, London, Christmas Island (now called Kiritimati), Republic of Kiribati, at 1° 52′ N, 157° 20′ W (Figure 1). Although no size comparison with other gulls was possible, the bird was about the size of a Herring (*L. argentatus*) or Lesser Black-backed Gull (*L. fuscus*) and appeared very similar to the black-backed nominate subspecies of the latter. The Lesser Black-backed Gull was eliminated by bill shape (relatively thick and stout), leg color (dull greenish brown), and the broader white trailing edge of the secondaries and tertials. Like the Lesser Black-backed Gull, it had a single white spot near the wingtip in the outermost primary. On the basis of time of year, freshness of plumage (no evidence of molt), and brightness of bill colors, the bird appeared to be in breeding condition. When approached, and shortly after it was photographed, it flushed, circled the lagoon, and disappeared in the distance. It was not seen again.

The Kelp Gull is the most abundant and widespread gull in much of the Southern Hemisphere, where it is found in Antarctica, Australia, New Zealand, South America, and Africa. In Australia, where uncommon, it is found north to around 28° S in southern Queensland, in South America to around 2° S in southern Ecuador (Ridgely and Greenfield 2001), and in

Figure 1. Adult Kelp Gull, Christmas Island, 9 September 1999.

Photo by H. Lee Jones

Africa to around 10° S in Angola, with isolated nesting records to 12° N in Senegal (Urban et al. 1986, Barlow and Wacher 1997). Its full latitudinal range extends over 60° and includes several subspecies (Jiguet 2002).

The Kelp Gull is increasing in both population size and range following increasing human development of Southern Hemisphere seacoasts (del Hoyo et al. 1996). Vagrancy to the United States has been increasing, as noted in Louisiana, where the species has bred since 1989 on the Chandeleur Islands and hybridized with the Herring Gull (ABA Checklist Committee 2001, Dittmann and Cardiff 2005). The Kelp Gull has been recorded from Texas (Gottschling 1996, Lockwood and Freeman 2004) and from Indiana in 1996 (Hess 2004), in Maryland from late 1998 or early 1999 through at least November 2004 (Kostenko 1999, Day 2005), and possibly in Colorado in 2003 (Hess 2004). Elsewhere in North America it has been found in Mexico on the Yucatán Peninsula in 1987 and 1991 (Howell et al. 1993), in the West Indies in Barbados in 2000, and in Trinidad in 2000–01 (Hayes et al. 2002). There are no records from Europe or Asia, nor were there any previous pelagic Pacific Ocean records north of Norfolk Island (29° S, 168° E), where Higgins and Davies (1996) recorded it as a vagrant.

GLAUCOUS-WINGED GULL (*Larus glaucescens*)

A bird in first-winter plumage was first observed by Jones and photographed by Rauzon on the beach at London, Kiritimati, on 16 January 2002 (Figures 2 and 3). Identification was based on the all-black stout bill, the paler

Figure 2. Glaucous-winged Gull, first cycle, in flight harassed by Sooty Terns, Christmas Island, 16 January 2002.

Photo by Mark Rauzon

Figure 3. Glaucous-winged Gull, first cycle, Christmas Island, 16 January 2002.

Photo by Mark Rauzon

outer webs of the outer primaries, lack of a secondary bar, and weak tail band—all combining to give an appearance more uniform than the smaller and slimmer-billed but otherwise similar Thayer's Gull (*L. thayeri*).

In North America the Glaucous-winged Gull breeds from the Aleutian Islands south to Oregon and ranges in winter south to Baja California, rarely to the Revillagigedo Islands in Mexico (American Ornithologists Union 1998). There is a recent record from El Salvador at 13° N (Jones 2003). In Asia, the Glaucous-winged Gull breeds on the Kamchatka Peninsula and winters south to northern (rarely southern) Japan. It is a casual vagrant in eastern and southern mainland China (Shandong, Fujian, and Guangdong provinces), and in Hong Kong at 22° N (Carey et al. 2001). In the Pacific, it is a fairly frequent winter visitor to the Hawaiian Islands (especially in the leeward islands) and on Johnston Atoll (Pratt et al. 1987). Single gulls are seen episodically in the central Pacific. For example, P. Unitt (pers. comm.) photographed one Glaucous-winged Gull in first-winter plumage at 4° 43′ N, 146° 54′ W on 10 March 1977.

In 2001–02 this species appeared to invade the subtropics, especially Hawaii, where eight individuals were reported on the Hawaii Christmas Bird Count in December 2001; cumulatively, only eight individuals had been found on the previous 29 annual counts (http://www.audubon.org/bird/cbc/). Relatively high numbers in the central Pacific may explain the appearance of the one at Christmas Island. Another possible sighting was at Wake Atoll, also in winter 2001–02, by island personnel, who described a large "café-au-lait" colored bird sitting in the harbor. A similar invasion may have occurred in the late 1960s, as suggested by previous unpublished reports. Hawaii Christmas bird counts include four Glaucous-winged Gulls seen during the winters of 1968–69 and 1969–70 (http://www.audubon.org/bird/cbc/). Additionally, two immatures were collected in spring 1968 and 1969 by Smithsonian personnel at Johnston Atoll (Sibley and McFarlane 1968), and a gull tentatively identified as an immature Glaucous-winged was seen in winter 1967 at Wake Atoll (Smithsonian Institution Pacific Ocean Biological Survey Project unpubl. notes).

LAUGHING GULL (*Larus atricilla*)

In the lagoon of Wake Atoll (19° 18′ N, 166° 38′ E) Rauzon saw two Laughing Gulls, one a molting one-year-old (Figure 4), the other an adult in basic plumage, during July 2003. They were gone by November.

In the Line Islands Jones observed a first-winter bird in Christmas Island's main village on 1 February 2001, and Jones and Rauzon observed a second-year bird, possibly the same individual, foraging at the seaward entrance to the lagoon around the main village beaches on 15 January 2002. Between April and August 2004, A. Wegmann (pers. comm.) saw about 14 individual Laughing Gulls in both basic and alternate plumages at Palmyra Atoll (5° 52′ N, 162° 05′ W).

Laughing Gulls are common in North America on the Atlantic coast, where they breed from New England to Belize, the West Indies, and French Guiana; in winter they range to northern Brazil. On the Pacific coast, they breed from northeastern Baja California to Colima in western Mexico, oc-

Figure 4. Laughing Gull, first cycle molting to second cycle, Wake Atoll, 4 July 2003.

Photo by Mark Rauzon

curring irregularly north to California; in winter they occur south to Peru (Burger 1996). This species is a somewhat regular visitor throughout the Atlantic and Pacific, with annual occurrences also in Europe (Cramp 1983). It is casual in Africa being recorded in Morocco and Senegal (Urban et al. 1986), and Australia (Burger 1996).

In the central Pacific, most records are from the Hawaiian Islands (Pratt et al. 1987). Elsewhere, the Laughing Gull has occurred in the Phoenix Islands and Line Islands (King 1967, VanderWerf et al. 2004). It is accidental in the Marshall Islands on Bikini Atoll (Garrett 1987), in the northern Marianas Islands on Saipan (Stinson et al. 1991), in the Samoan Islands (Muse et al. 1980, Hake et al. 1998), and in the Gambier Islands of French Polynesia (VanderWerf et al. 2004).

Pelagic vagrancy is a characteristic of the gull family, as these observations from remote oceanic islands demonstrate. The Laughing Gull is the most regular and widespread vagrant gull in the central and south Pacific. The Glaucous-winged Gull is less prone to long-distant vagrancy than Laughing Gull, but the records we summarize suggest periodic pulses of increased dispersal. The Kelp Gull has now been recorded for the first time in the central Pacific as the species continues its worldwide expansion.

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RESULTS OF A PILOT STUDY MONITORING NORTHERN SAW-WHET OWL MIGRATION IN CENTRAL ALBERTA, CANADA

CHUCK PRIESTLEY and LISA PRIESTLEY, Beaverhill Bird Observatory, P. O. Box 1418, Edmonton, Alberta T5J 2N5; charles@ualberta.ca

ABSTRACT: We initiated monitoring of Northern Saw-whet Owl (*Aegolius acadicus*) migration by mist-netting at Beaverhill Lake Natural Area, Alberta, Canada, with a part-time effort in 1997, 2000, and 2001. On the basis of positive results in those years we expanded the study to nightly netting following a standardized protocol in fall 2002 and 2003. Those years yielded 145 and 151 owls captured, respectively. First-year owls represented 68.7% of captures, and females represented 73.8% of captures (two-year mean). Migration began on 18 August, peaked on 3 October, and ended 11 November. Ninety-five percent of the owls were captured between 9 September and 4 November. There were three recaptures within a year and no recaptures in subsequent years.

Migration counts have been used to monitor bird populations for many years. These counts have been observational, such as hawk watches (Fuller and Titus 1990, Hussell and Ralph 1998; http://www.bsc-eoc.org/download/Hussell-Ralph%20migmon.pdf), or based on capture, such as banding programs using various trapping techniques (Dunn and Hussell 1995). For many species passive mist-netting has become a standard way of gauging the relative abundance of birds moving through an area (Hagan et al. 1992, Dunn and Hussell 1995). More recently, mist nets and an audio lure have been used in combination to study the movements of various nocturnal owls (Erdman and Brinker 1997, Evans 1997, Whalen and Watts 1999).

The Northern Saw-whet Owl (*Aegolius acadicus*) is monitored extensively in the eastern United States and southeastern Canada during migration (Catling 1971, Holroyd and Woods 1975, Weir et al. 1980, Slack and Slack 1987, Cannings 1993, Brinker et al. 1997). Little monitoring, however, has been reported from the West or from regions north of 44° N—2000 km south of the northern limit of the species' range. Some pilot monitoring has been conducted on Vancouver Island, British Columbia (P. Levesque pers. comm.), in southern Alberta (D. Collister pers. comm.), and in north-central Oregon (Frye and Gerhardt 2003). To date, however, no data from standardized monitoring of Saw-whet Owl migration have been published from northwestern North America.

Even though Saw-whet Owls are known to occur in Alberta during the winter (Beck and Beck 1988, 1997), birds banded as nestlings in central Alberta have been recovered in Idaho, Wisconsin, North Dakota, Manitoba, and British Columbia (R. Cromie, H. Pletz pers. comm.). This suggests that Saw-whet Owls may migrate regularly through central Alberta in numbers large enough to warrant a long-term program.

Our objectives were to determine whether Saw-whet Owls migrate in fall past Beaverhill Lake, Alberta, and if so, of what age and sex classes the birds consist and on what schedule they move. Here we report results from three pilot years and two years of full-time standardized monitoring.

METHODS

Our study site was at the southeast corner of Beaverhill Lake (53° 32.7′ N, 113° 29.4′ W, elevation 672 m). This shallow lake is approximately 18 km long and 10 km wide, covers 13,900 ha, and is located in the aspen parkland ecoregion. Most of the north and west sides of the lake are surrounded by cropland and rangeland. The forest surrounding the east and south edges of the lake is dominated by Quaking Aspen (*Populus tremuloides*) and Balsam Poplar (*P. balsamifera*). Understory shrubs are predominantly willow (*Salix spp.*).

In 1997, 2000, and 2001, we set up two mist nets (12 m long, 2.6 m high, 38 mm mesh) for several nights, for variable numbers of hours. The main objective of this preliminary effort was to determine whether any Saw-whet Owls were moving through the Beaverhill Lake area. During the fall of 2002 and 2003 we used a full-time standardized protocol that incorporated recommendations by Dunn (1999). In this phase of the study we set up four mist nets (12 m long, 2.6 m high, 60 mm mesh) about 150 m from the banding laboratory. Two nets were set adjacent to each other to form an L-shaped array, and two nets were set 20 m and 40 m from the array. We opened the nets one hour after sunset and broadcast the Saw-whet's solicitation call (Cannings 1993) from a CD player next to the L-shaped net array. To assess the owl's migration schedule we started netting earlier (15 August) and finished later (15 November) than we expected the birds to be moving. Nets were opened for four hours each night from 15 August to 10 October and for six hours from 11 October to 15 November. Nets were not set when the temperature fell below –20°C, the wind was stronger than 3 on the Beaufort scale (19 km/hr), or during precipitation. We checked the nets every 30 min, and any captured owls were brought back to the lab for processing. Data recorded included age based on Pyle (1997), sex based on Brinker (www.projectowlnet.org/df.htm), weight, wing chord, tail length, and molt of primaries, secondaries, and rectrices.

Because the number of net-hours varied some evenings, we standardized daily totals into daily capture rates per net-hour by dividing the total number of birds caught by the number of net-hours.

We calculated the mean capture date and the 66% and 90% distributions of captures around the mean so that our results could be compared to those of Holroyd and Woods (1975). In addition, we calculated the distribution of 95% of captures centered on the mean to determine appropriate starting and ending dates for future monitoring at our site.

To calculate the mean capture date, we added daily capture totals to make a seasonal capture total. We then divided the seasonal capture total by 2. We added daily capture totals in chronological order until the sum was larger than half the seasonal total. The mean capture date was the date on which the midpoint capture total was reached.

We calculated the 66%, 90%, and 95% capture distributions, centered on the mean capture date, by multiplying the seasonal capture total by 0.17 and 0.83, 0.05 and 0.95, and 0.025 and 0.975, respectively. We then determined the dates marking the distributions by adding the daily capture

totals chronologically until the two critical capture rates were reached for each interval.

RESULTS

Occurrence

Table 1 shows our effort and results for the 5 years of the study. In 2002, two owls were recaptured within the same season: a first-year female was banded on 17 September and recaptured on 30 September (13 days between captures), and another first-year female was banded on 15 October and recaptured on 26 October (11 days between captures). In 2003 one owl was recaptured within the same season: a first-year female banded on 19 October was recaptured on 21 October (2 days between captures). These encounters suggest that in addition to migrating through the study area, some individuals stop over.

Age and Sex Classes

First-year birds constituted the most common age class captured. During 2002 and 2003, these immatures accounted for 74.8% and 62.6% of the total captures, respectively. In 2002 we captured 3 males (2.1%), 108 females (75.5%), and 32 owls of unknown sex (22.4%). In 2003, we captured 11 males (7.5%), 106 females (72.1%), and 30 owls of unknown sex (20.4%).

Timing

During both 2002 and 2003 the mean capture date was in early October (Figure 1). The interval within which 95% of the owls were caught extended from mid-September to early November (Figure 1).

The distribution of captures around the mean capture date was skewed toward the early end of the season in both 2002 (1.4) and 2003 (1.6) (Figure 2). The distribution of capture rates was slightly (1.3) leptokurtic in 2002 and strongly so (4.3) in 2003 (Figure 2). The high value of kurtosis in 2003 might be explained by larger variation in weather during that year: more variation in weather is likely be related to more variation in daily capture rates.

Table 1 Numbers of Northern Saw-whet Owls Captured at the Beaverhill Lake Natural Area, Alberta, Autumn 1997–2003

Year	Nights	Net-Hours	Owls Captured	Owls/Net-Hr
1997	6	79.75	1	0.012
2000	13	182.75	12	0.066
2001	12	149.50	9	0.060
2002	74	1097.00	145	0.132
2003	64	903.00	151	0.167
Total	169	2412.00	322	—

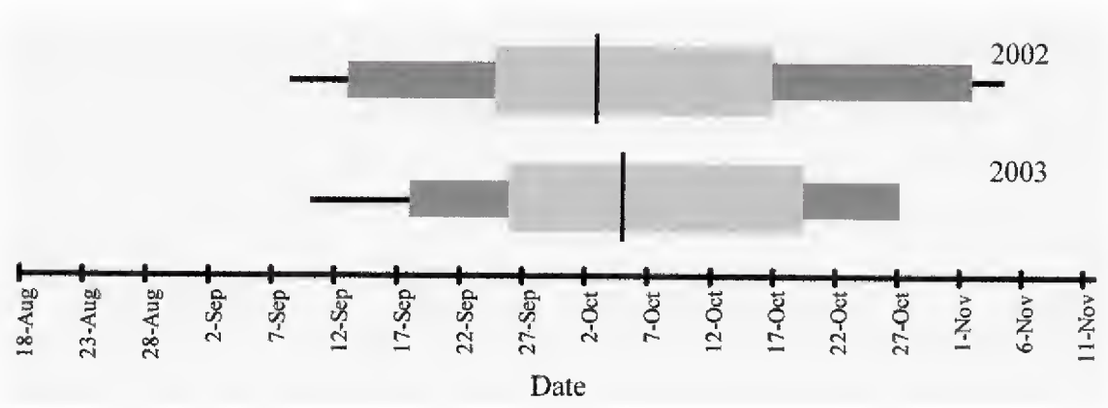

Figure 1. Temporal distribution of fall captures of Northern Saw-whet Owls at the Beaverhill Lake Natural Area, Alberta. The vertical line represents the mean, the light gray block 66% of the captures, the dark gray block 90% of the captures, and the horizontal black line 95% of the captures.

DISCUSSION

Our study demonstrates that Saw-whet Owls migrate through the Beaverhill Lake Natural Area in autumn. We found the widest interval encompassing 95% of captures in 2002: 9 September–4 November. We suggest that future monitoring at Beaverhill Lake focus on this period.

Our findings are consistent with those of Holroyd and Woods (1975), who reported that in fall peak rates of Saw-whet Owl capture are later at southern banding stations than at northern stations. Of the sites of monitoring reported by Holroyd and Woods (1975), Wisconsin is latitudinally closest to (44° 15.4′ N, 1011 km south) and Maryland is latitudinally farthest from (39° 4.3′ N, 1589 km south) our research site. The peak capture dates reported

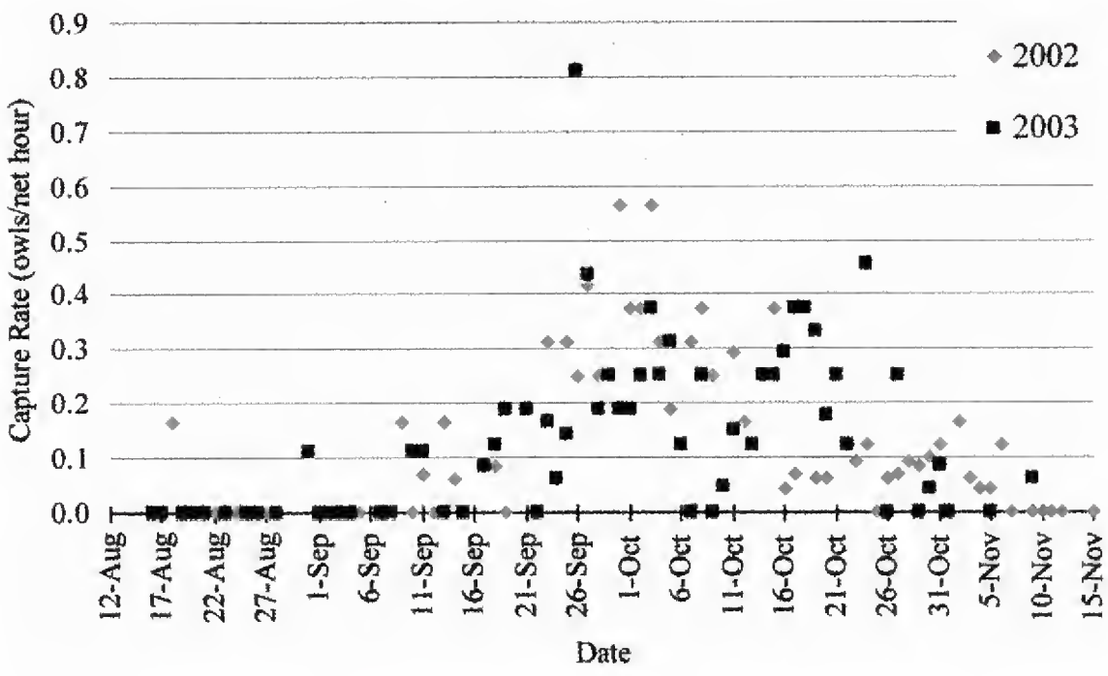

Figure 2. Daily capture rates of Northern Saw-whet Owls at the Beaverhill Lake Natural Area, Alberta, autumn 2002 and 2003.

for these two places were mid October and late October, respectively. The peak capture date at Beaverhill Lake of early October was earlier than any of the peak dates reported by Holroyd and Woods (1975).

Most of the Saw-whet Owls we caught were in their first year. This result was expected because of the species' high reproductive output (Cannings 1993). More work is needed on determining the age of Saw-whet Owls by molt pattern because some of the owls we caught had molted in patterns not described by Pyle (1997).

The great majority of the owls captured at Beaverhill Lake were female (at least 74%; 94% of those identified to sex, 2-year mean). This finding is consistent with the results of other projects monitoring Saw-whet Owl migration. Females represented the majority of total captures at Cape May, New Jersey (79%, 5-year mean), Assateague Island, Maryland (86%, 6-year mean), Casselman River, Maryland (92%, 5-year mean), and Cape Charles, Virginia (82%, 3-year mean) (Brinker et al. 1997). Duffy and Matheny (1997) reported that 71% (15-year mean) of the Saw-whet Owls caught at Cape May were female.

The high proportion of females caught at our station might be caused, in part, by the audio lure. Duffy and Matheny (1997) reported that using an audio lure increased the proportion of females caught over that yielded by passive mist netting. Duffy and Matheny (1997) found that the audio lure accounted for 23% of the discrepancy between the number of females and males caught. The discrepancy between the proportion of females and males caught at our site, however, was 73.4% in 2002 and 64.6% in 2003. The reason for this large discrepancy is unknown.

Only three of the owls we banded were recaptured within the same year, and none were recaptured in a subsequent year or recovered away from our site. Given the limited number of years of monitoring and the lack of other banding stations nearby focusing on the Saw-whet Owl, this result was expected. We anticipate our recapture and recovery rates to increase with more years of monitoring, as has been found elsewhere (Weir et al. 1980, Whalen and Watts 2002).

The study will have to be continued for multiple years before we can investigate any trend in abundance. The benefit of such analyses increases exponentially when similar data from other areas, throughout the range of the target species, are compared and pooled. Trends can suggest the target species' response to environmental manipulation (Rivera-Milan et al. 2003), information useful to ecosystem management (Dunn et al. 1997, Bennun 2000).

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LEAST FLYCATCHER RANGE EXPANSION INTO WASHINGTON STATE

STEVEN G. MLODINOW, 4819 Gardner Avenue, Everett, Washington 98203; SGMlod@aol.com

ABSTRACT: The Least Flycatcher (*Empidonax minimus*) has expanded its range west over the past 50 years at least. It has occurred annually in Washington since the 1970s, and its subsequent numbers there have increased steadily. Records extend from late April to late September, with spring migration likely peaking during late May and early June and fall migration peaking during early September. Many birds appear to be seeking territories and/or mates, but as of 2004 there were only two records of nesting. No obvious habitat changes coincided with this species' arrival in Washington, and appropriate habitat seems to have long been present. The explanation for the Least Flycatcher's range expansion may be related to population increases in its core range and/or microhabitat changes not yet described. The Least Flycatcher's expansion parallels that of several other woodland birds also currently expanding west from eastern North America.

The fifth edition of the A.O.U. checklist (1957) described the Least Flycatcher (*Empidonax minimus*) as breeding west to southwestern Yukon, northeastern British Columbia, and western Montana. By the end of the 1950s, this species had moved into portions of British Columbia where it was previously absent: the Cariboo and Chilcotin areas of the interior and the Fort Nelson area of the province's extreme northeast (Johnson 1994, Campbell et al. 1997). It colonized southern British Columbia's Okanagan Valley in the mid- and late 1970s (Cannings et al. 1987). Since 1995, Least Flycatcher sightings in Idaho have also increased dramatically, perhaps partly the result of increased observer effort and skill. Idaho recorded its sixth through eighth records as recently as the summer of 1996 (Svingen 1996), but only two years later eight were recorded during one summer (Trochlell 1998). By the summer of 2002, reports from Idaho were too many to be enumerated in *North American Birds*, and only new nesting locations, in five counties, were mentioned (Trochlell 2002). South of Washington, Least Flycatchers were first noted in Oregon in 1977 (Mewaldt 1977) and have been found annually there during migration since 1981 (Marshall et al. 2003). Territorial birds have been noted at a number of Oregon locations, and nesting was confirmed near Mount Vernon, Grant County, in 1985, 1995, and 1997 (Marshall et al. 2003). The Least Flycatcher is also annual as a migrant in California, much more frequent in fall than in spring (Small 1994), in contrast to the situation in Oregon and Washington. California has two confirmed nesting records, from Modoc County in 1984 (Campbell and LeValley 1984) and Humboldt County in 2003 (Rogers et al. 2004).

METHODS

This study is based on records published in *North American Birds* and its predecessors through fall 2004. For seasons during which records were not individually listed, I obtained the details of specific records from the journal's editors. As the Least Flycatcher is not a species reviewed by the Washington

Bird Records Committee, I used the judgment of the Washington reports' editors as the basis for a records' acceptability.

RANGE EXPANSION IN WASHINGTON

Washington's first Least Flycatcher was found, surprisingly, in the northwest corner of the state near Anacortes on 23 June 1958 (Stein and Michener 1961). The next record was nearly ten years later at eastern Washington's Turnbull National Wildlife Refuge on 1 June 1968 (Rogers 1968). Thereafter, the number of Least Flycatchers increased dramatically (see Table 1). Subsequent sightings fall into two clusters: spring/summer and fall.

Spring and Summer Records

In spring Least Flycatchers probably arrive in Washington from the north or northeast. There are several other "eastern" passerines with a similar distribution in far western North America, such as the Red-eyed Vireo (*Vireo olivaceus*), Veery (*Catharus fuscescens*), Gray Catbird (*Dumetella carolinensis*), American Redstart (*Setophaga ruticilla*), and Northern Waterthrush (*Seiurus noveboracensis*). Because these species are fairly common to common breeders in northeastern Washington and British Columbia yet rare to extremely rare as spring migrants in Oregon and California (Small 1994, Marshall et al. 2003), the majority of these birds likely arrive in Washington from British Columbia or Idaho. Comparison of migration dates in Washington to those from locations farther east at similar latitudes supports this hypothesis, as these species arrive considerably later in Washington. For example, the Red-eyed Vireo migrates through Minnesota from late April through early June (Janssen 1987) but typically does not appear in Washington until late May (Wahl et al. 2005). Similarly, the American Redstart and Northern Waterthrush pass through Minnesota from late April through late May and late April through early June, respectively (Janssen 1987). In Washington, the redstart does not arrive until the very end of May, and the waterthrush appears during early or mid-May (Wahl et al. 2005). The Least Flycatcher follows the same pattern.

Of the 146 spring/summer Least Flycatchers detected in Washington,

Table 1 Least Flycatcher Numbers in Washington by Year

Interval	Individuals
1970–1974	1
1975–1979	7
1980–1984	8
1984–1989	12
1990–1994	26
1995–1999	41
2000–2004	72

127 have been east of the Cascade crest. Their dates range from 28 April through 31 July, with a peak from late May through early July (Figure 1). In an attempt to separate migrating birds from those that were nesting or establishing territories, I assigned records involving multiple birds at one location or birds present at the same location for a week or more to the latter category (group A). This categorization is conservative because many sightings not meeting these criteria may also have been of birds nesting or on territory.

Group A consists of 25 records totaling 49 birds. These records extend from 1 May to 31 July but show a distinct peak from mid-June through early July. They cluster in two areas: the frequently birded portions of the Cascades between 650 and 800 m elevation in Yakima County (7 records involving 15 birds), and a swath across the northernmost tier of counties from Okanogan to Pend Oreille plus Spokane County, mostly at elevations of 550–800 m (14 records involving 37 birds). Exceptions include a bird at 950 m along the Little Pend Oreille River in Stevens County and several records at ~300 m near the Okanogan River. The four remaining records in group A include two from western Washington, both from Monroe, Snohomish County, at ~100 m elevation, one at the Davenport Cemetery, Lincoln County, at ~700 m, and one from southeastern Washington at Dixie, Walla Walla County, at ~500 m. Notably, Pend Oreille, Stevens, and Ferry counties are birded little, and an increase in birders' activity there would likely increase the number of records from the northeastern corner of the state greatly. For instance, on the Kalispell Indian Reservation, Pend

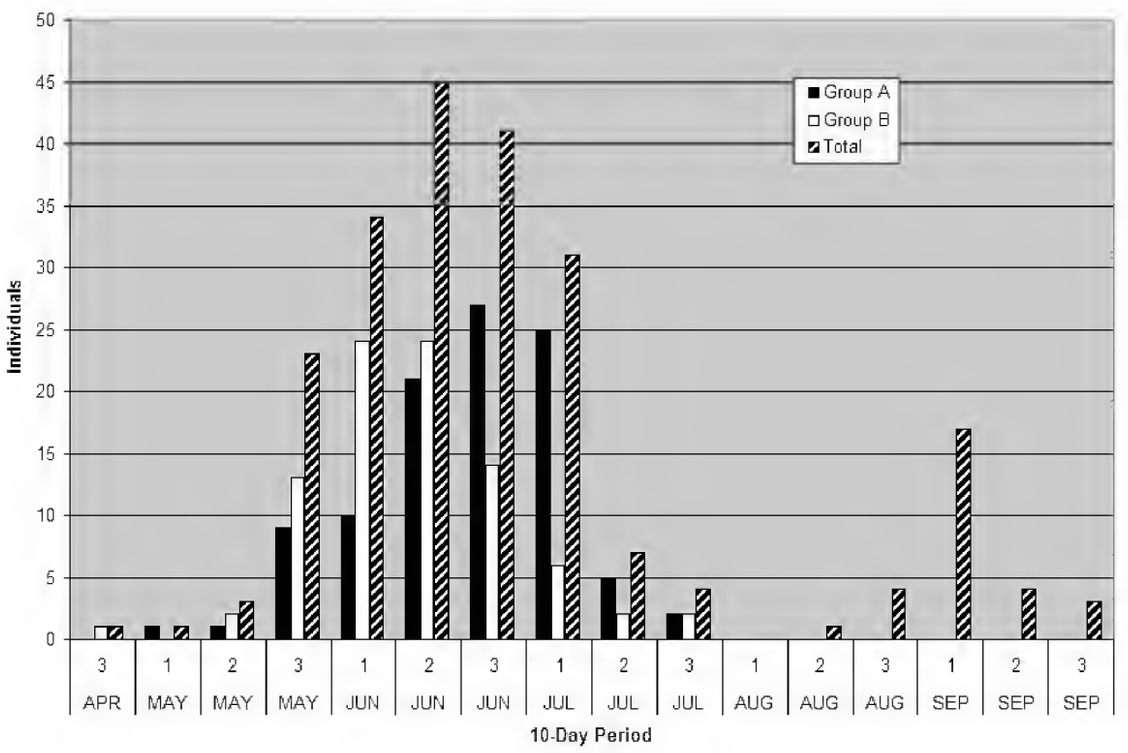

Figure 1. Temporal distribution of the Least Flycatcher in Washington. Group A, birds inferred as territorial; group B, birds possibly not territorial (see text for exact definitions). Periods 1, early month (dates 1–10); 2, mid-month (dates 11–20); 3, late month (dates 21 to month's end). Fall sightings are not sorted by group.

Oreille County, M. Moskwik found three or four pairs (but no nests) during June and July 2002 (Mlodinow and Tweit 2002).

Despite this sizeable number of potential breeders, there are only two records of actual nesting: an adult with a single fledgling along the Little Pend Oreille River, Stevens County, 4 July 1985 (Rogers 1985) and pair with a nest (no young fledged) at Monroe, Snohomish County, June/July 1990 (Tweit et al. 1979). Group A records come from a fairly specific habitat: somewhat open riparian or moist deciduous woodlands almost always containing quaking aspen (*Populus tremuloides*) or black cottonwood (*P. trichocarpa*) (Stepniewski 1999, M. Houston, M. Moskwik, and W. Weber pers. comm.). This habitat is essentially identical to the habitat occupied in British Columbia (Campbell et al. 1997) and fits closely the habitat Salt and Salt (1976) described for Alberta. The latter stated that the Least Flycatcher is a "common inhabitant of poplars and cottonwoods in coulees and river valleys. In the parklands, light growths of aspen and poplar, . . . in the north . . . open deciduous woods, and in the mountains, aspen groves on gentle slopes."

The remaining 97 spring/summer records of the Least Flycatcher, all of single birds (group B) come from a wider variety of habitats. Many are from the same habitat as group A records, indeed, many are from the same locations, but there are also some from woodlands dominated by ponderosa pine (*Pinus ponderosa*), riparian woodland of alder (*Alnus* spp.) and big-leaf maple (*Acer macrophyllum*), city parks, and migrant traps in the Columbia Basin. It is impossible to distinguish which of these birds were territorial and which were still migrating. Group B records range from 28 April through 26 July, with a peak from late May through early July, and especially from early and mid-June. Only during late May and early June does the number of birds in group B exceed the number in group A by 33% or more (44% in late May and 140% in early June), suggesting that this is peak migration time through Washington. Of the 11 spring/summer records from oases in arid regions of Washington lacking suitable nesting habitat, all but two from 26 May to 13 June, with outliers on 28 April and 11–18 July. Paralleling the differences in migration schedule noted for the Red-eyed Vireo and other species, migration of the Least Flycatcher in Minnesota is somewhat earlier, from late April to late May with a peak in mid-May (Janssen 1987).

Fall Records

On the basis of 17 records involving 21 birds, fall migration stretches from mid-August through late September and peaks in early September (Figure 1). Interestingly, fall migration in Minnesota also peaks from late August through mid-September (Janssen 1987). In contrast to spring, almost all fall records are from migrant traps in the Columbia Basin, especially the town of Washtucna, Adams County, which accounts for 8 fall records and 12 individuals. The only fall record from typical breeding habitat is of a bird seen in Oroville, Okanogan County, 12 September 2000. The only records from western Washington are from Seattle, King County, 17 August 1998 and near Conway, Skagit County, 19–21 September 1998.

POTENTIAL EXPLANATIONS FOR RANGE EXPANSION

Recent habitat changes within Washington and British Columbia do not seem to provide an explanation for the Least Flycatcher's range expansion. Over the last several decades in British Columbia, forestry practices have been neutral towards aspen groves, and there does not appear to have been a substantial increase or decrease in this habitat (W. Erickson and L. Bedford pers. comm.). In Washington, policies on public lands toward aspen and cottonwood groves have been likewise neutral, but on private lands aspens and cottonwoods have been replaced to some degree by economically more profitable conifers, and overall there appears to have been a decline in cottonwood and aspen groves (B. McKellar pers. comm.).

If the habitat in Washington has been relatively stable over the last half-century, why is the Least Flycatcher just now arriving? The last glacial retreat began about 12,000 years ago, and the distributions of oak (*Quercus* spp.) and spruce (*Picea* spp.) approached their current distributions in North America approximately 7000 years ago (Davis and Shaw 2001). The arrival of major tree species, however, does not demonstrate the establishment of an entire climax ecosystem. Newton (2003) argued that even after the arrival of major tree species, a region may take thousands of years to develop the floral and faunal balance favorable to a given bird species. Consequently, a bird may not be able to occupy an area until the area has developed sufficient, or proper, diversity of other biota, after the arrival of major tree species. Additionally, after an area becomes suitable for a given species, that species has to produce ample surplus individuals in its core range before it can colonize the new habitat. Newton (2003) effectively argued that such a delay has taken place among 28 species characteristic of the Siberian taiga currently expanding their ranges westward into northern Europe. These species continue to winter in southeast Asia, whereas most other European breeders winter in Europe or Africa, establishing their eastern Palearctic origins (Newton 2003).

The recent arrival of the Least Flycatcher in Washington may be the result of recent subtle changes creating suitable habitat. Another possibility is that appropriate habitat has been present for some time since the last glacial period, but the core population was not producing enough surplus individuals for range expansion. Consequently habitat or climate changes elsewhere may have played a role. For example, Breeding Bird Surveys have shown an increase in the Least Flycatcher, including the central and southern prairies of Canada (Dobkin 1992, Erskine et al. 1992, Sauer and Droege 1992).

Notably, there are several other "eastern" woodland species whose breeding ranges are also spreading west, including the Broad-winged Hawk (*Buteo platypterus*), Barred Owl (*Strix varia*), Yellow-bellied Sapsucker (*Sphyrapicus varius*), Eastern Phoebe (*Sayornis phoebe*), Blue Jay (*Cyanocitta cristata*), White-throated Sparrow (*Zonotrichia albicollis*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Indigo Bunting (*Passerina cyanea*), and Baltimore Oriole (*Icterus galbula*) (Bock and Lepthien 1976, Madge and Burn 1994, Campbell et al. 1997, Campbell et al. 2001, Johnston 1994, Wheeler 2003, Erwin et al. 2004). A phenomenon similar to that Newton (2003) suggested in Eurasia may be occurring in North America.

CONCLUSION

The Least Flycatcher appears to be in the process of colonizing Washington,. Records have increased from one between 1970 and 1974 to 72 between 2000 and 2004. Some of this rise is undoubtedly due to intensified observer effort, but the increase is also real. Reasons for this species' occupation (or reoccupation) of the Pacific Northwest are not clear but do not seem to be relate to gross habitat changes in British Columbia or Washington. Instead, the cause is likely subtle habitat changes and/or population increase in the species' core range. The westward expansion is a pattern shared with several other woodland birds from from eastern North America.

ACKNOWLEDGMENTS

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NOTES

FIRST NESTING RECORD OF THE BLACK-BELLIED WHISTLING-DUCK ON THE BAJA CALIFORNIA PENINSULA, MEXICO

LUIS SAUMA, ROBERTO CARMONA, and GEORGINA BRABATA, Departamento de Biología Marina, Universidad Autónoma de Baja California Sur, Carretera al Sur km 5.5, Apartado Postal 19-B, La Paz, Baja California Sur, México 23080

The Black-bellied Whistling-Duck (*Dendrocygna autumnalis*) ranges from the southern United States to northwestern Peru, Argentina, and Brazil, occupying lakes and shallow freshwater marshes in the tropical and subtropical zones (A.O.U. 1998). It is a largely nocturnal species that often forms small groups, nests at heights of up to 3 m in large trees, and feeds on aquatic plants, cultivated grains, and seeds (Alsop 2001). Although the species is generally nonmigratory, extralimital records (some of which probably involve escapees) are scattered across the United States to southern Canada, as well as parts of Mexico outside of the normal range (James and Thompson 2001). The Baja California Peninsula is not part of the Black-bellied Whistling-Duck's historical range (Grinnell 1928, Wilbur 1987), but Howell and Webb (1992) reported one at San José del Cabo in June 1999, Carmona et al. (1999) reported four at Lagunas de Chametla, within the city of La Paz (11 and 12 December 1997; 14 February and 4 March 1998), and Erickson et al. (2001) reported additional sightings at both locations from 1992 to 1998. This paper updates the species' status in La Paz since that time and documents the first breeding record for the peninsula.

The La Paz region has a subtropical dry climate, with annual mean rainfall of 200 mm (Garcia and Mosiño 1969). It has two areas of permanent fresh water: the tank of Ejido El Centenario and five oxidation lagoons bordering Ejido Chametla (Lagunas de Chametla) (Castillo-Guerrero et al. 2002; Figure 1). The lagoons have an area of 25 ha, and more than 17 ha of flooded grasslands lie adjacent to them. Around these ponds grows typical desert vegetation, such as mesquites (*Prosopis* spp.) and chollas (*Opuntia* spp.), and such exotic trees as eucalyptus (*Eucalyptus* spp.) and salt cedar (*Tamarix* sp.). The lagoons make up a freshwater ecosystem that is used by numerous migrant and resident bird species (Castillo-Guerrero et al. 2002).

We documented the distribution and abundance of aquatic birds at Lagunas de Chametla in 1998 and from 2002 to 2004 (Table 1). We visited the area on 71 occasions and observed Black-bellied Whistling Ducks during 60 of those visits (many records, after 2001, published in *North American Birds*). We observed the maximum number, 37 birds, in December 2004.

Over the years, the average number of Black-bellied Whistling-Ducks per visit has increased (Table 1). Numbers in September and October were consistently low; this is related to the species' reproductive chronology along the mainland coast, since in those months the birds remain near their nesting sites.

Another month with low numbers is March. With the available data, we cannot explain this pattern, since February and April are well represented. With exception of the September–October decrease, there is substantial variation in the duck's monthly abundance from year to year (Table 1). We propose three probable reasons for these fluctuations: the numbers observed are not sufficiently large to reveal patterns, variation in the species' schedule of nesting on the mainland (such differences modifying the dates of beginning of the birds' dispersal), and/or local movements.

On 20 September 2004 we confirmed breeding at Lagunas de Chametla by observing two adults swimming with three small chicks. This date is somewhat later than the species' typical reproductive season of July–August (Leopold 1959). Four days

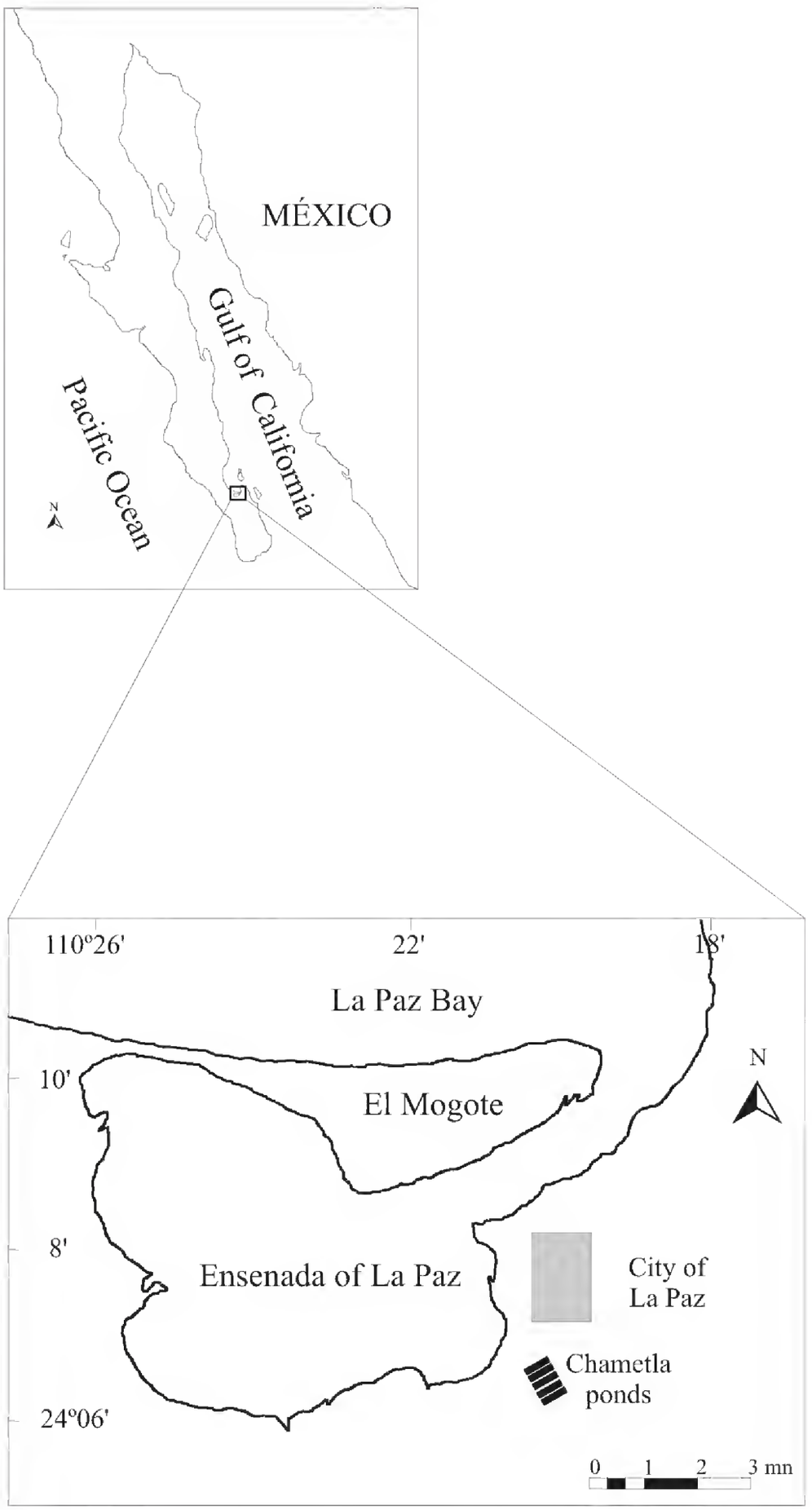

Figure 1. Location of Lagunas de Chametla.

Table 1 Monthly Average Abundance of the Black-bellied Whistling-Duck at Lagunas de Chametla

Month	1998	2002	2003	2004	Average per month
January	1	6	15	2	6.0
	(2)[a]	(1)	(3)	(1)	
February	1	5	16.25	11	8.3
	(2)	(1)	(4)	(2)	
March	0	NA[b]	2	4	2.0
	(2)		(1)	(1)	
April	9	NA	8	NA	8.5
	(2)		(1)		
May	9	NA	5	NA	7.0
	(2)		(1)		
June	5.5	10	9.5	NA	8.3
	(2)	(1)	(2)		
July	4.5	12.5	0	NA	5.7
	(2)	(2)	(1)		
August	13	6	NA	7	8.7
	(2)	(2)		(1)	
September	0.5	5	6	2.8	3.6
	(2)	(1)	(2)	(5)	
October	0	15	0	4.5	4.9
	(2)	(1)	(1)	(2)	
November	0.5	13.5	NA	18.5	10.8
	(2)	(4)		(2)	
December	1	1	0	20	5.5
	(2)	(1)	(1)	(2)	
Average per year	3.8	8.2	6.2	9.0	

[a]Figures in parentheses are the number of surveys per month.

[b]NA, no survey.

later, on 24 September, we photographed one adult accompanied by the same three chicks, which by then were about half grown (Figure 2). Their bills were blue-gray, and they had large gray legs and feet. A dark line from the back of the neck to the head broadened to form a dark crown. Each chick had a dark line from the beak to the eye and a light spot behind the eye.

The nesting of the Black-bellied Whistling-Duck on the Baja California Peninsula represents an extension of the species' known breeding range. This extension may have been due to birds that for some reason (e.g., incomplete molt, parasites) did not return to the normal breeding grounds. This record increases to eight the number of aquatic bird species known to breed at Lagunas de Chametla (see Carmona et al. 1999). Considering the scarcity of extensive freshwater marshes in this region and threats to such areas posed by human activities (Rodríguez Estrella and Arriaga 1997), the protection and conservation of Lagunas de Chametla is important for bird conservation on the peninsula.

We thank the personnel of the Programa de Aves Acuáticas of UABCS for their collaboration in the field, and also the manager of the treatment plant, Abigail Solano, for free access to the study area. Reviews by Richard A. Erickson, Melania López Castro, and Liza Gómez Daglio are greatly appreciated.

Figure 2. Adult (A) and young (B) Black-bellied Whistling-Ducks at Laguna de Chametla, 24 September 2004.

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AN UNUSUAL HIGH COUNT OF PACIFIC LOONS FROM A FRESHWATER LAKE IN BRITISH COLUMBIA

THEODORE G. TOBISH, JR., 2510 Foraker Drive, Anchorage, Alaska 99517; TGT@alaska.net

GARY H. ROSENBERG, P.O. Box 91856, Tucson, Arizona 85752-1856

In the evening (approximately 20:30) of 5 June 2004, while traveling north on the Cassiar Highway (British Columbia Route 37), we stopped at the Hodder Lake Wayside (BC 37 km 246.5), located on the west shore of Hodder Lake some 90 km north of the intersection with BC 37A at Meziadin Junction. On this roughly 10-hectare lake we saw a scattered assortment of waterfowl and an extremely large, conspicuous raft of birds. From a distance of approximately 1 km, we scoped this group and observed a uniform, very tight mass of Pacific Loons (*Gavia pacifica*), all of which were in definitive alternate plumage (Figure 1). Counting in blocks of ten, we conservatively estimated 1070 individuals, and we noted that during our 20 minutes of viewing this group, none of the birds appeared to be diving. Also on the lake, away from this main raft, was an aggregation of 26 Common Loons (*G. immer*) and four Yellow-billed Loons (*G. adamsii*), also all in definitive alternate plumage. During the preceding hours, while we were driving the Cassiar Highway from Stewart, British Columbia, at the head of Portland Canal and tidewater, the weather was predominantly very low overcast with scattered drizzle and patchy ground-fog. At times along this stretch of road, the cloud cover and local fog was well below the adjacent ridges (1100–2000 m). There was little wind, and visibility rarely exceeded 1 km.

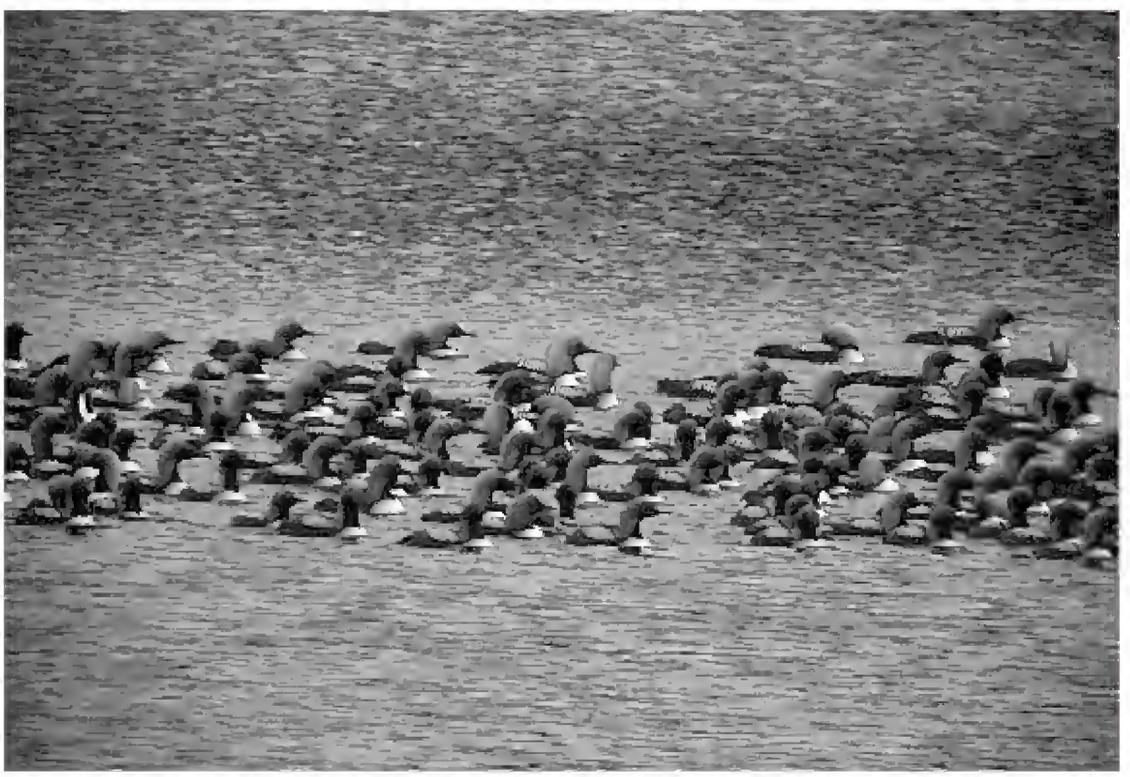

Figure 1. Part of a flock of about 1070 Pacific Loons on Hodder Lake, British Columbia, 5 June 2004.

Photo by Gary H. Rosenberg

It seemed apparent that these loons were northbound migrants, probably funneling through the high plateau followed roughly by the Cassiar Highway, situated between the east flank of the Coast Range and the west slopes of the Skeena Mountains. Possibly this local intra-mountain weather disturbed or blocked a northward passage of loons, and Hodder Lake provided ample staging and reorientation habitat. With numerous large lakes in the general vicinity, such as Meziadin Lake ~90 km to the south, it seemed likely that these migrants were forced onto relatively small Hodder Lake as a result of immediate and local weather and geography. This area of the lower Cassiar lies approximately 100 km from the nearest tidewater, in Portland Canal, which empties to the southwest into the Gulf of Alaska and Dixon Entrance. The Pacific Loon breeds on interior lakes in northern British Columbia, in a disjunct population in the west-central part of the province, across the Yukon and Northwest Territories, and east through northern Manitoba to northwest Quebec (AOU 1998). Little is known or published relative to the loon's migration corridors away from the coast or into and through interior British Columbia or farther north into the Yukon and Northwest Territories.

From a literature search we found that no flocks of this size have been recorded away from the coast in British Columbia, the Yukon Territory, Alaska, or anywhere within the nearctic range of the Pacific Loon (Russell 2002, Campbell et al. 1990, Godfrey 1986). The Pacific Loon can be conspicuously abundant on migration, especially in spring along the Pacific coast (Campbell et al. 1990, Russell 2002), with a peak of spring abundance noted in coastal British Columbia between 1 May and 15 June (Gaston and Jones 1991). We, as well as Steven C. Heinl (pers. comm.), have observed numbers (~60) of presumed migrant Pacific Loons, usually in pairs or small groups, in late May and early June in Portland Canal. While spring migrants often stage at coastal sites with favorable resources, such staging is reported only sporadically from fresh water. Smaller numbers of migrating Pacific Loons, and groups of up to 200 Common Loons, have been recorded in the Yukon (Sinclair et al. 2003). "About 200" Pacific Loons were observed in northeast British Columbia once in a previous spring migration (Chris Siddle pers. comm.). Otherwise, essentially all references to large-scale or single-flock Pacific Loon migration counts come from winter concentrations, or from extended tallies of migrants flying by strategic coastal sites, mainly in California, Oregon, and Washington. The literature lists peak counts from noncoastal sites rarely exceeding 30–50 birds, with groups of 5 to 15 being the norm.

Although Russell (2002) summarized circumstantial evidence and previous speculation that Pacific Loons migrate directly overland from the Pacific coast flyway to the Canadian arctic, he was clear that there was no direct evidence of such overland routes. And Palmer (1962) and McLaren et al. (1977) wrote that the phenology of spring migration suggests that some loons undertake considerable overland flights in the high arctic, bypassing coastal routes around the perimeter of Alaska. This Hodder Lake observation and sporadic reports of small numbers of loons from interior British Columbia and southern Yukon confirm the existence of significant northbound overland spring movements and aggregations across western Canada, at least occasionally. That this concentration was so large was likely caused by local weather and geography.

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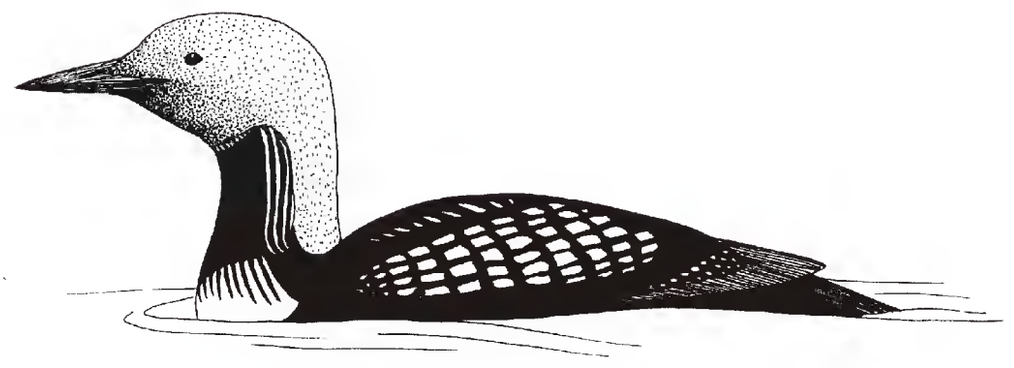

Pacific Loon

Sketch by George C. West

ANOMALOUSLY PIGMENTED BROWN BOOBIES IN THE GULF OF CALIFORNIA: LEUCISM AND POSSIBLY HYBRIDIZATION WITH THE BLUE-FOOTED BOOBY

JOSÉ ALFREDO CASTILLO-GUERRERO and ERIC MELLINK, Centro de Investigación Científica y de Educación Superior de Ensenada, Apdo. Postal 2732, Ensenada, Baja California, México (U.S. mailing address: CICESE, P. O. Box 434844, San Diego, California 92143-4844); emellink@cicese.mx

ERIK PEÑALOZA-PADILLA and MIGUEL PRADO-LÓPEZ, Universidad de Guadalajara, Centro Universitario de Ciencias Biológicas y Agropecuarias, Las Agujas, Nextipac, Zapopan, Jalisco, México

Plumage color anomalies in the Sulidae (boobies and gannets) seem to be uncommon and have received little attention in detailed studies of the family (Dorward 1962, Nelson 1978). The only reference to such anomalies in the Brown Booby (*Sula leucogaster*) is of an albino noted by Harrison (1983). Similarly, hybridization or mixed-species pairing among sulids has only rarely been reported; the only suspected cases involve the Brown and Masked (*S. dactylatra*) Boobies (Worcester, 1911, Nelson 1978), although the supporting evidence is weak. Here we report five leucistic Brown Boobies and two likely hybrids of Brown and Blue-footed (*S. nebouxii*) Boobies at Farallón de San Ignacio, northern Sinaloa, Gulf of California, México, during 2003 and 2004.

The Brown Booby colony at Farallón de San Ignacio has been estimated at 1200 pairs (González-Bernal et al. 2002), and the only other booby nesting on the island is the Blue-footed Booby, whose colony consists of 1500 pairs (González-Bernal et al. 2002). Most Brown Boobies here nest on the slopes of the island, whereas most Blue-footed Boobies nest on the flat top, although some pairs of each species nest with the other species.

Between January and March of 2003 and February and May of 2004 we recorded two male and three female leucistic Brown Boobies with white mantles, scapulars, and lesser coverts, all areas that are brown in normally pigmented birds. Sex was determined by size and voice. The males showed more extensive white on the head than does normally pigmented *S. l. brewsteri*; the heads of the females were pale brown (Figure 1). We did not observe breeding by the leucistic females, but the two leucistic males mated with normally plumaged females. One male, which we color-banded, mated and produced normally colored fledglings in two consecutive years.

These leucistic Brown Boobies at Farallón de San Ignacio superficially resembled Masked Boobies in coloration, and this similarity might cause misidentifications in the field. However, the smaller body size, lack of a black facial mask, relatively longer tail, the soft and less musical voice, and the forward head-waving display identified the birds as Brown Boobies. Additionally, the males mated readily with female Brown Boobies.

Some cases of leucism in seabirds have been attributed to dietary deficiencies (Clapp 1974). Although we do not know the nutritional state of the birds at the time of their last molt, they showed no obvious signs of malnutrition. Since one leucistic male paired with a normal female and produced normal fledglings, we think that a recessive gene is a more plausible explanation.

From 19 February to 16 April 2004 at Farallón de San Ignacio we observed a male and a female booby that appeared to be hybrids between the Brown and the Blue-footed. The head, neck, and chest of the apparent hybrid female (Figure 2) were paler than the dark brown of a typical female Brown Booby. The line of division between the dark chest and white belly was irregular and not clearly demarcated. The greenish-yellow legs and pinkish bill were similar to those of a normally colored Brown Booby. The feathers of the head and neck were textured more like those of a Blue-footed

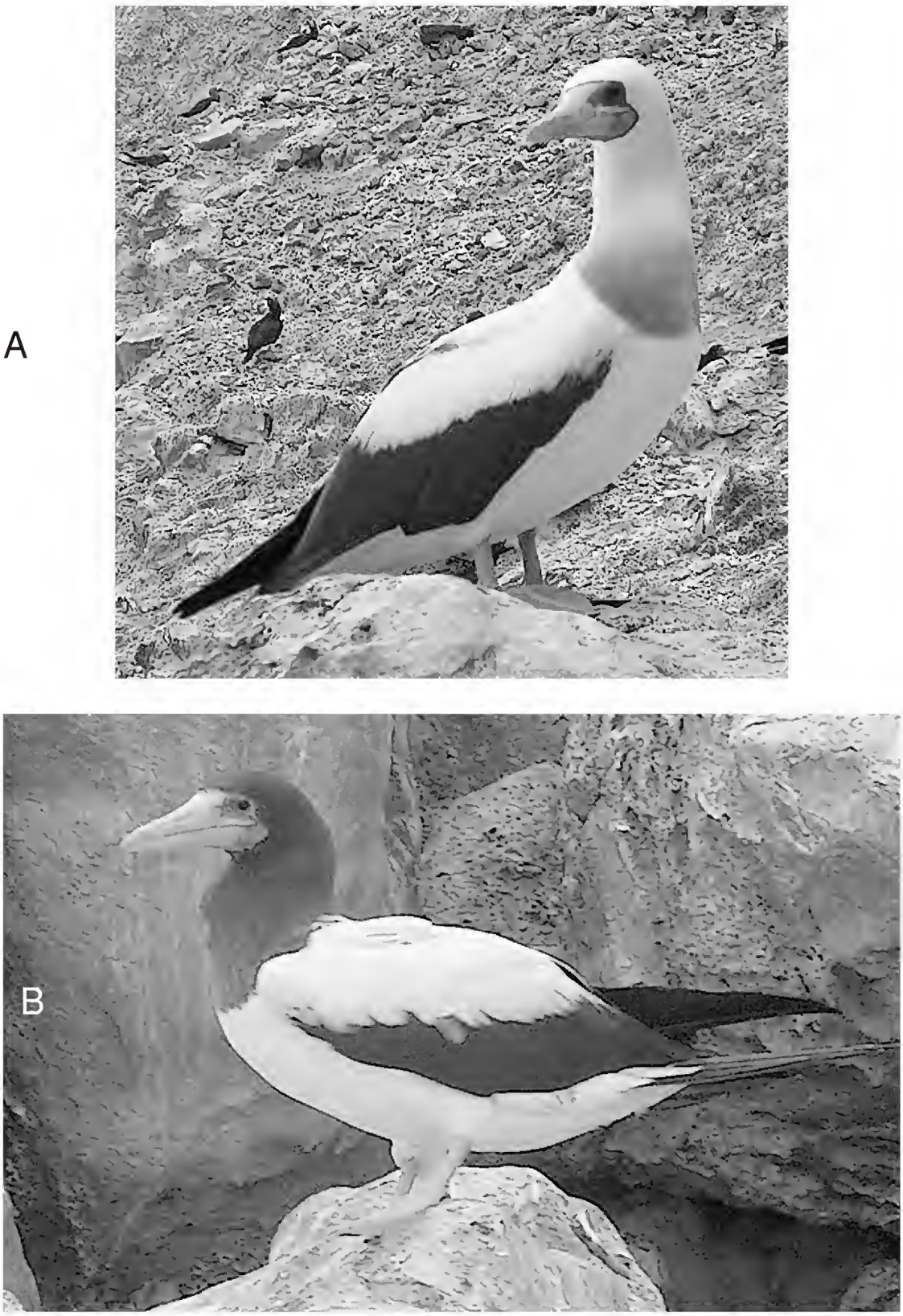

Figure 1. Male (A) and female (B) leucistic Brown Boobies at Farallón de San Ignacio, northern Sinaloa, Mexico, 18 October 2004.

Figure 2. Apparent hybrid Brown Booby × Blue-footed Booby at Farallón de San Ignacio, northern Sinaloa, Mexico, 20 February 2004.

Booby, and the slopes of forehead and bill in the apparent hybrid were more steeply angled than in a typical Brown Booby. The base of the bill, face, and orbital ring were blue-gray. The outer portion of the iris was yellow as in a female Blue-footed Booby. The honking vocalization was slightly deeper and stronger than that of a female Brown Booby. In body size it resembled a large female Blue-footed (Figure 2). The male, identified by voice, was seen once and looked like the female but smaller.

This female was courted by a normally colored male Blue-footed Booby but did not successfully mate during the two months that we monitored her. During courtship, when the male performed the sky-pointing display, the female responded by picking feathers and gravel in Brown Booby fashion, rather than reciprocating with the typical sky-pointing display of the Blue-footed Booby.

In addition to our observations, B. Tershy and D. Breese (pers. comm.) noted two anomalously colored males on Isla San Pedro Mártir that were intermediate in appearance between the Brown and Blue-footed Boobies. One paired with a female Brown Booby that laid an egg, but the other courted female Brown Boobies unsuccessfully for five years.

Reports of hybrids among boobies are uncommon (Nelson 1978, Schreiber and Norton 2002), and none has been confirmed by genetic analysis (Nelson 1978, Schreiber and Norton 2002). At Using Island, Philippines, Worcester (1911) found a male Brown Booby and a female Masked Booby attending an empty nest. He speculated that three anomalously colored Brown Boobies also present on that island were hybrid offspring of such a pair. Additionally, Nelson (1978) published photographs of possible hybrids on Boatswain Bird Island in 1961 by D. F. Dorward and on Moku Manu in 1967 by R. W. Schreiber. Both birds were anomalously colored, but they were not described in detail.

Hybridization between the Brown and Blue-footed Boobies seems difficult, as both species rely mostly on visual clues for pair-bonding (Torres and Velando 2003) and both have clearly different courtship routines (Nelson 1978). Furthermore, because forced copulations by boobies are unknown (B. Tershy pers. comm.), hybrids are unlikely to be produced by such behavior.

Hybridization could occur through imprinting mistakes in dense colonies of mixed species (Hays 1975). Eggs that have rolled out of nests or very young wandering chicks may occasionally be adopted by other pairs (Dorword 1962, Drummond et al. 2003, Mellink 2002). If, in a two-species colony, the eggs or chicks of one species were to be adopted by the other, the chick could become imprinted on the wrong species (Hays 1975). However, it is uncertain whether such imprinting mistakes might lead to hybridization.

We recommend that boobies with "imperfect" coloration patterns or looking like Masked Boobies but outside their known range, and especially if they are in or near colonies of the Brown Booby, be carefully examined and documented appropriately, as they could be leucistic. Also, to our knowledge this is the first documentation of probable hybrid Brown × Blue-footed Boobies. More attention to, and better documentation of, anomalously pigmented individuals is needed to improve our understanding of leucism and of possible hybridization between these species of boobies.

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SAYORNIS SAYA YUKONENSIS IS VALID

ROBERT W. DICKERMAN, Museum of Southwestern Biology, University of New Mexico, Albuquerque, New Mexico 87131

Say's Phoebe (*Sayornis saya*) nests in western North American from subarctic Alaska south to central Mexico. Four subspecies of it have been named. From north to south these are *S. s. yukonensis* Bishop (type locality Glacier, White Pass, Alaska), *S. s. saya* (Bonaparte) (type locality near Pueblo, Colorado), *S. s. quiescens* (type locality San José about 45 miles east of San Quintín, Baja California), and *S. s. pallida* (Swainson) (type locality southern central plateau of Mexico). Browning (1976) reviewed the literature on Say's Phoebe and in a detailed study of a large collection of adults reached the conclusion that *yukonensis* is not valid on either the basis of color or by measurements. He reiterated the problems in assessing geographic variation in this species: fading of the plumage because of exposure to the sun (considerable in this species of open habitats that molts only once per year) and foxing of the plumage (shifting of grays to browns with a specimen's age in the museum). Rea (1983) enlarged on the problems, pointing out that the birds may leave nesting areas prior to molting and that wintering populations may be mixed, consisting of two or more subspecies. He suggested that birds in fresh juvenal plumage may be the best basis for working out geographic variation in the species, and he noted that 9 of the 11 specimens in the type series of *yukonensis* are juveniles (Bishop 1900). Browning did not mention the juvenal plumage. Rea (1983:185, map) extended the nesting range of *quiescens* from Baja California to central Arizona (Pima and Pinal counties).

Rea (1983) wrote that "juvenal specimens from Alaska, eastern Oregon east at least to Denver and south apparently to Zuni, New Mexico, and perhaps the higher elevations of northern Arizona are darker, with distinctly darker crowns and broad, dark gray chest bands that invade more or all the throat," that is, nominate *saya*. He noted that paler young from Baja California and Lower Sonoran portions of Arizona represent the paler *quiescens*. He studied 20 specimens in juvenal plumage from Alaska to Baja California (pers. comm.).

With three recently taken juveniles and a bird in freshly molted basic plumage from the University of Alaska Museum at hand, I reexamined specimens in comparable plumage in the U.S. National Museum of Natural History. Because of the problems of foxing in older specimens elucidated by Browning (1976) and Rea (1983), I compared only depth or darkness of color. Seven of nine juveniles from Alaska were darker dorsally than ten of eleven juveniles of *saya* from Montana, Idaho, Colorado, Nebraska, and New Mexico (Fort Wingate and Capitan Mountains—both "northern" New Mexico localities), with dark crowns contrasting more sharply with the back. One from Tolugak Valley, Alaska (USNM 435243), was inseparable from the series of *saya*, and one from Lewiston, Idaho (USNM 563463) was dark like the specimens from Alaska, though its crown and back were nearly concolor, as in *saya*.

I compared six July–August specimens in fresh basic plumage from Alaska to six from Oregon, Idaho, and New Mexico. All were definitely darker dorsally than five of the six southern birds. The Alaska specimens are darker on the throat and breast band, but five of the six are somewhat less ochraceous on the belly than the specimens of *saya*. One bird from Oregon (USNM 259774), taken 27 August, fits the Alaska series dorsally and on the throat. It probably represents an early migrant of *yukonensis* and was so annotated by H. C. Oberholser and J. W. Aldrich.

Earlier, I compared the four recently taken Alaska birds with ten older Colorado birds from the Denver Museum of Natural History and a larger series of New Mexico and Arizona specimens at the Museum of Southwestern Biology. Within groups defined by similar age and plumage wear, Alaska birds were darker than those from Colorado, and Colorado birds were darker than those from central and southern New

Mexico and Arizona. The sharpest break was between Colorado and central and southern New Mexico and Arizona, corresponding to the break between nominate *saya* and *quiescens*.

Although the numbers of specimens examined are relatively small, considering the agreement between these two studies using the recently taken Alaska series and two different series of adults and juveniles, I recommend recognizing *Sayornis saya yukonensis*. It is darker in both juvenal and basic plumages, with the crown constrasting with the back, and with darker throat and breast than in comparable specimens of *S. s. saya*.

Thanks to the University of Alaska Museum and the Denver Museum of Natural History for the loan of specimens and to the curators and staff of the National Museum of Natural History for access to that incredible collection.

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BOOK REVIEWS

Atlas of the Breeding Birds of Humboldt County, California, by John E. Hunter, David Fix, Gregory A. Schmidt, and Jude Claire Power. 2005. Redwood Region Audubon Society, Eureka. 445 pages, plus maps and illustrations. Paperback, $30 (ISBN 0-9760380-0-5); hardback $50.

Situated in the northwest corner of California, the state's fourteenth largest county is a significantly bird-rich area that has long attracted the attention of biologists and birders. As a measure of this importance, Humboldt County now has a comprehensive breeding bird atlas (hereafter Atlas) that covers the county's 197 breeding species in 445 pages. Although Humboldt County is easily pigeonholed as a land of continuous conifer forest and heavy logging, the picture painted by the Atlas is much more fascinating and complicated. Not only does Humboldt County sit at the crossroads of northern species (e.g., the Ruffed Grouse, Gray Jay, Black-capped Chickadee, and Varied Thrush) and southern species (e.g. the White-tailed Kite, Oak Titmouse, and Blue-gray Gnatcatcher), it encompasses numerous pockets of unexpected habitats and birds. The latter category includes Mountain Bluebirds haunting high peaks on the eastern border of the county, a surprisingly vigorous population of American Redstarts nesting along the coast, and newly discovered nesting Rufous-crowned Sparrows in a remote canyon in the southeast of the county.

The Atlas begins with extensive acknowledgments thanking the many volunteers and community organizations that made the project possible. This is followed by a long introduction that provides detailed and informative overviews and maps on the climate, ownership, and habitats in the study area. Chapters discussing methods and results are followed by 197 species accounts, then appendices that cover supplemental species, block statistics, scientific plant names, and block results for each species, literature cited, and an index.

The Humboldt Atlas appears to be a fairly rigorous effort designed in consultation with atlas veterans from other California counties and drawing heavily on methods developed for atlases in Marin, Monterey, Orange, and Sonoma counties. Field work spanned five years (1995–1999) and was coordinated by a steering committee under the auspices of the Redwood Region Audubon Society. Much of the field work was conducted by professional field biologists (with which Humboldt County seems particularly well endowed), but this turned out to be a curse as well as a blessing because many biologists ended up being too busy during the field season to focus on difficult blocks! The task of surveying 425 blocks (each 5 × 5 km) was further complicated by the fact that 66% of the county is privately owned and by the long history of environmental confrontation and marijuana cultivation that made some landowners less than thrilled about cooperating with the project (the Atlas credits landowners for being "strident and colorful with their negative replies"). To get around this problem the steering committee parsed the county into 91 priority and 334 nonpriority blocks, but in the end only one block in the whole county remained entirely off limits. Coverage goals were established for priority and nonpriority blocks, but the Atlas doesn't mention what percentage of blocks met these goals. As is probably the case with many atlas efforts, the Humboldt County atlas found itself well behind schedule by the end of its third year. Fortunately, a timely grant from the National Fish and Wildlife Foundation enabled the hiring of well-known field ornithologist David Fix, and the project got back on schedule.

During the study. five species were confirmed nesting in the county for the first time (the American Bittern, Rhinoceros Auklet, Barred Owl, White-throated Swift, and Rufous-crowned Sparrow), and the Willow Flycatcher was confirmed breeding for the first time since 1931. The Atlas documents 181 confirmed, possible, or probable nesting bird species and notes the status of 16 additional species for which there is previous evidence of breeding in the county. These do not include miscellaneous

observations that did not meet the strict criteria established for the project (including a singing Chestnut-sided Warbler, Magnolia Warbler, Northern Waterthrush, Hooded Warbler, and Black-chinned Sparrow, and a female Great-tailed Grackle). The most widely distributed breeding species turned out to be the Steller's Jay, Common Raven, Pacific-slope Flycatcher, Chestnut-backed Chickadee, and Dark-eyed Junco. But one result reveals how particular breeding bird efforts can be: the species confirmed breeding in the most blocks was the endangered Spotted Owl (which also ranked between the Song Sparrow and California Quail as the species detected in the most blocks!). This is testament to intensive owl surveys, but when the heavily annotated Spotted Owl map is compared to sparsely marked maps for much more common species it weakens the case that the Atlas was a comprehensive effort. Unfortunately, the scientific strength of the Atlas is further diminished by remarks made in the introduction that the Atlas was a "great excuse to go birding!" and that it should be used as a "recreational tool."

Species accounts in the Atlas are strongly written with rich detail on the habitat use, seasonality, behavior, and breeding, wintering, and migratory patterns of each species. All accounts have large maps showing confirmed, possible, and probable breeding blocks. Only the Peregrine Falcon is missing a map in order to safeguard known nesting territories. Every account also refers to the excellent compilations by Yocom and Harris (1991) and Harris (1996), who provided the historical backdrop against which the Atlas was compiled. Rather than devoting space to life-history details already covered in the excellent Marin County Breeding Bird Atlas, this Atlas focuses on the status and distribution of birds in Humboldt County. The result is a very clear and highly informative source of information on all of these birds.

If anything, the one aspect lacking in the species accounts is an examination of whether species' ranges have expanded or contracted, or whether numbers are changing over time. With so many field biologists conducting point counts in the county, and a long history of popular Christmas Bird Counts, it seems as though there should be numerous data sets to help explore these questions. For instance, little is said of changes in bird populations due to development of the county's coastal lowlands and marshes, or of changes after establishment of the Arcata Marsh in 1981 (one of the county's few large freshwater marshes and the site of many unusual breeding records). And little is said about changes in bird populations due to intensive logging that has removed closed-canopy forests and opened up second-growth stands across 74% of the county. Even the Spotted Owl account is noticeably lacking in hard numbers and statements about the effects of logging on this incredibly well-studied bird. Fortunately, the species accounts are so well written and provide such high-quality information that this is a minor quibble. For anyone interested in the movements and distribution of birds along the northwest coast of California the Humboldt Atlas will be an essential resource, especially because it dovetails nicely with similar efforts in Marin and Sonoma counties to give a broad picture of the avifaunas of coastal northern California. The Atlas also provides an update and companion volume to the summaries by Yocom and Harris. The folks of Humboldt County are very lucky to have all these resources at hand.

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David Lukas

Birds of Washington: Status and Distribution, by Terence R. Wahl, Bill Tweit, and Steven G. Mlodinow (eds.). 2005. Oregon State University Press, Corvallis. 436 pages, 35 black-and-white illustrations, numerous maps. Hardback, $65. ISBN 0-87071-049-4.

The *Birds of Washington* (hereafter BWA) is the first work since 1953 (when *Birds of Washington State* by Jewett et al. was published) to cover the status of Washington's birds completely. The three editors contributed a large portion of the species accounts, but, all told, more than 40 authors played parts in writing the book. All 483 species recorded in Washington have individual species accounts, and separate sections in the back of the book treat introduced and hypothetical species (one of which, the Red-necked Stint, has since been confirmed in the state).

BWA opens with a brief introduction, followed by chapters describing bird habitats of Washington, the maps, conservation, sources, and a discussion of changes in status and distribution since 1950. For regularly occurring species, the accounts begin with a brief statement of status, followed by a map and bar graphs, a list of Washington subspecies, and sections on Habitat, Occurrence, Remarks, and Noteworthy Records. Rarities have shorter accounts explaining their occurrence. Illustrations by Shawneen Finnegan and G. Scott Mills are pleasing to the eye and break up the columns of text, bar graphs, and maps.

The goals of the book as stated on page vi are to "describe the status and abundance, trends, and changes of species and populations occurring in Washington as of the year 2000, and to update and correct previous descriptions." To meet the last of these objectives, BWA often refers to Jewett et al. (1953), highlighting discoveries made since 1953 as well as changes in trends for individual species. Overall the book does an excellent job of meeting its goals. Most of the accounts are clear, easy to read, and interesting. The bulk of each account is made up of the Occurrence section, while the Remarks often add random pieces of interesting information. Unlike *Birds of Oregon* (Marshall et al. 2003), which bills itself as a general reference, BWA contains very little information about general bird biology, identification, and distribution outside the state. Given that this information is widely available in other sources, the editors felt it more fitting to limit the scope of BWA to topics related directly to Washington. Therefore, the user does not have to wade through long accounts to find relevant information on the status and distribution of Washington's birds. We found the BWA style saves time and frustration when using the book to answer specific questions. Some readers will find the cut-and-dry writing style rather dull, but factually BWA is a marked improvement over Washington's two prior state books, Dawson and Bowles (1909) and Jewett et al. (1953). Though both earlier books are more pleasing and interesting to read, the information in BWA is far superior.

The Noteworthy Records section is often broken down into subsections for western and eastern Washington and includes seasonal high counts, early and late dates, and records of regional interest. This section often appears to be a jumbled listing of numbers, but because it is broken down into subsections there is generally enough information for the significance of a record to be deciphered. This is a great improvement over Jewett et al. (1953), who often listed dates and locations without numbers, or without any comments as to the relevance or significance of a sighting.

The treatment of subspecies is excellent, thoroughly researched, and well explained. Careful reading of this section highlights just how strongly the Cascade Range acts as a barrier for birds, with many species having different subspecies breeding or wintering on opposite sides of these mountains. Unfortunately, with such a complex subject there are always errors, and the information for subspecies of the California Gull is missing. This is disappointing, as a good treatment of the two subspecies' distributions is needed before our knowledge can be refined. Also, the subspecies for Washington's single record of Gray-cheeked Thrush is stated as "presumably *minimus*" when it is more likely to be the widespread *aliciae*. A rather humorous

error is a misspelling of the Western Red-tailed Hawk's western subspecies, which appears to have been spelled phonetically as "calourous" instead of *calurus*. Generally, however, the handful of errors does not detract from a superb handling of an immense and difficult subject.

If you have an interest in Washington rarities this is the volume to consult. For example, when checking the status of an eastern warbler in Washington, one will find a complete list of accepted and rejected records and often a statement of how the records correlate with those from Oregon, California, and British Columbia. While BWA treats species at least through the year 2000, many accounts include more recent data, and very recent additions to the state list are also included. For example, the Redwing found on 21 December 2004 made it into the text, not bad for a book released in April 2005.

The seasonal distribution maps incorporate the latest mapping technology. They were created with GIS software by choosing appropriate habitats from satellite land-cover maps within the species' breeding and wintering ranges. Breeding distributions were based on ranges determined in the 1997 Gap Analysis Project, which used data from the 1987–1996 Washington Breeding Bird Atlas (Smith et al. 1997). Winter ranges were determined largely from Christmas Bird Counts and supplemented by other sources. The end result is range maps that look very detailed and precise but are not necessarily entirely accurate. Maps were modified on the basis of literature and reviewers' opinions; however, more extensive review could have revealed more areas where species occur in low numbers or very locally. For example, there are nesting records of the Least Flycatcher from the Puget Sound lowlands, but the map does not indicate breeding by this species west of the Cascades. The maps do not offer any information on abundance and can be misleading (as stated in the introduction) because a bird can be rare over a large area and very common in a small area, but the reader has no information from which to make these distinctions. At least one color map of the state's habitats would have been a worthwhile addition. Overall the strongest feature of the maps is how they draw a clear correlation between habitat, geography, and bird distribution. One can easily locate high-quality sagebrush habitat in the state—just look at the map for Sage Thrasher. Want to know where rivers and streams occur on the east side of the state? Check the Yellow-headed Blackbird account. With a little more improvement this technology is likely to become the standard for all range maps.

As with any books of this nature, which compile large amounts of information from numerous authors, there are mistakes and inconsistencies. For example, the introductory statement of status frequently does not agree with the bar graphs, and sometimes the Noteworthy Records do not match the bar graphs. In the case of Sooty and Short-tailed shearwaters, the text indicates that the latter species is more common in winter, but the bar graph suggests the former is commoner year round. Common knowledge suggests the text is correct, but the Noteworthy Records section indicates that the bar graph is correct. Unfortunately, no mention is made of the difficulty in distinguishing these two species, and how that might affect the data. And, the absence of a key to the bar graphs (the most glaring problem in the book, and a very unfortunate omission) means there is no way to know exactly what sort of numbers the bars and dots indicate!

As another example, the 2004 split of the Canada Goose into two species, and the half-hearted attempt to update the book to reflect this, wreaked havoc in BWA. The text for this species pair begins with the names of both species at the top of a single account, which seems to be the extent of effort put forth to acknowledge the split. All subspecies are listed together, but with no designation as to which belong to which species. The Cackling Goose, *B. h. minima*, is linked to the scientific name *hutchinsii* (which is misspelled as *hutchinsonii*), with *minima* in parentheses, while the remainder of the account refers to *hutchinsii* when it should refer to *minima*.

Richardson's Goose, *B. h. hutchinsii*, is at best a rare vagrant to Washington, whereas the Cackling Goose, *B. h. minima*, is a regular winter resident. The text does a fairly good job of describing in which regions of the state the various subspecies of both species occur, even listing a few very local populations of *B. canadensis fulva*. But it does not give meaningful information about the abundance of a given subspecies within a region. For example, it would have been useful to explain that *B. h. taverneri* is generally more much more numerous than *B. c. parvipes* on the west side of the Cascades, whereas the opposite is true on the east side.

The accounts vary greatly in length and sometimes in content, partly because of there being over 40 authors, but the editors did an excellent job of making the accounts similar in style. There are still quite a few instances of poorly worded sentences, which can be annoying, but usually these do not affect the information being conveyed. Some of the terminology used to define rarities is a bit puzzling, however, as in the distinction between "visitor" and "vagrant" being somewhat arbitrary, and the use of "casual" is not intuitive. But most mistakes are fairly benign, and BWA succeeds in presenting information in a manner that is user-friendly and interesting to read. This work comes as a greatly needed reference to the status and distribution of Washington's avifauna, and it serves as a solid new baseline for all interested in this fascinating area.

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Jessie H. Barry and Cameron D. Cox

FEATURED PHOTO

IDENTIFYING HYBRID OYSTERCATCHERS IN SOUTHERN CALIFORNIA

WALTER WEHTJE, 2286 Barbara Drive, Camarillo, California 93012; walter.wehtje@verizon.com

The photo featured on the back cover of this issue was taken on 26 May 2005 on the south side of San Nicolas Island, Ventura County, California. Its subject appears to be a rather dark American Oystercatcher (*Haematopus palliatus*). A large shorebird of sandy beaches, tidal mudflats and rocky shores, along the Pacific coast this species ranges from central Chile to central Baja California. In central Baja California it is replaced by the Black Oystercatcher (*H. bachmani*), a bird of rocky shorelines that ranges north to the Aleutian Islands. For a 300-mile stretch along the Baja California peninsula the two species interbreed, forming a stable hybrid zone (Jehl 1985). Any pied oystercatcher observed north of the international border had probably wandered north from Baja California and has to be examined closely. Of the 35 documented sightings of "American" Oystercatchers in southern California, 11 have proved to be of hybrids (Cole and McCaskie 2004).

So what constitutes a "good" American Oystercatcher? Jehl posed this question more than 20 years ago. Using techniques developed for studying hybrid populations devised by Charles Sibley and his students (e.g., Sibley and Short 1959), Jehl established a hybrid index for black and pied oystercatchers. Specifically, he scored the uppertail coverts, tail, chest, undertail coverts, thighs, greater secondary coverts, extent of white wing stripe, underwing coverts, and axillaries from 0 (black, as in *H. bachmani*) to 4 (white, as in *H. palliatus*). The character score for the belly ranged from 0 to 6. All ten characters totaled, a Black Oystercatcher would score 0, while an American Oystercatcher would score 42. Because all characters are variable, because the subspecies of the American Oystercatcher from western Mexico (*H. p. frazari*) has a more mottled chest than birds from the Atlantic coast (*H. p. palliatus*), and because Black Oystercatchers tend to have brownish bellies in the southern reaches of their range, Jehl considered a score of 0–9 to indicate a pure Black Oystercatcher and a score of 30–38 to indicate a pure Frazar's American Oystercatcher. He considered any bird with a score of 10–29 a hybrid.

So how do we rank the bird in the featured photo? Once I found this bird I observed it for 15 minutes and noted most of the characters necessary to score it. The uppertail coverts were black with a few white mottlings (score 1), the tail had the basal ¼ of the rectrices white (score 2), black extended from the chest onto the upper $\frac{1}{3}$ of the belly (score 1), the belly was ¾ white (score 5), the undertail coverts were not observed, the thighs were entirely white (score 4), the greater secondary coverts on the folded wing were not observed, the white wing stripe extended to the outer secondaries but not onto the primaries (score 2), and the underwing coverts and axillaries were not observed. The bird thus scored a 15 out of 28 possible and is therefore a hybrid. Although the combined scores of the characters not seen add up to 16, and a score of 14 more would push the bird into the minimum of the range acceptable for a Frazar's American Oystercatcher, it is unlikely that all such characters would score as 4. The portion of the undertail coverts visible in the photograph shows some black, suggesting that character wouldn't score higher than a 3. In this case the bird would score a 29 and still be considered a hybrid. If all its characteristics could be assessed, this bird would probably score in the high 20's, showing more influence of *palliatus* than of *bachmani* (Jehl pers. comm.).

San Nicolas Island is a naval installation 60 miles off the southern California coast with limited public access. I have surveyed the south side of the island 10–15 times since 1993 and first observed an American Oystercatcher there in 1996. During the past five years most individuals appear to be hybrids, with the last pure American Oystercatcher seen in May 2002. Although the island is surrounded by rocky shorelines and sandy beaches (habitat appropriate for the American Oystercatcher), the presence of a resident population of Black Oystercatchers, large numbers of California Sea Lions (*Zalophus californianus*) and Elephant Seals (*Mirounga angustirostris*) on the beaches, and a limited source population unite to push any vagrant American Oystercatcher into a mixed mating with a Black Oystercatcher. The individual photographed was paired with a Black Oystercatcher and is most likely two or more generations removed from any pure American Oystercatcher. Its offspring may disperse to the mainland, and we should therefore examine any "American" Oystercatcher on the California mainland carefully,

I thank Joseph Morlan for suggesting this article, Grace Smith of the U.S. Navy for allowing access to San Nicolas Island, and Joseph R. Jehl, Jr., for providing trenchant comments on an initial draft of this note.

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